VOICE OF THE DIABETIC

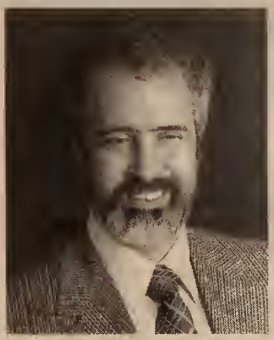
A SUPPORT AND INFORMATION NETWORK

The Diabetics Division of the National Federation of the Blind

Volume 8, No. 3 **Summer Edition 1993** **Page 1**

Medicare reimbursement for blood glucose monitors

by Ed Bryant



Ed Bryant, editor, *Voice of the Diabetic*, reports on inconsistencies in Medicare's reimbursement program.

On May 20, 1993, I wrote to Health and Human Services Secretary Donna Shalala, bringing to her attention the difficulties blind diabetics and those losing vision often experience when trying to obtain Medicare reimbursement for purchase of glucometers. Although the reimbursements are supposed to be nationally standardized and fully implemented as of January 1993, our researchers (members of The Diabetics Division of the National Federation of the Blind in several states) discovered wide disparity in reimbursement percentages, in ease of access to needed equipment, and in interpretation of federal law. It is my hope that publishing their findings will help rectify the problems they uncovered.

Because home blood glucose monitors are considered "durable medical equipment," coverage is provided under Medicare Part B. When a blood glucose monitoring system is purchased and paperwork is submitted to Medicare for reimbursement, the health care provider and vendor must complete the documentation needed and send it to the appropriate Medicare office. Guidelines for documentation are contained in a Health Care Financing Administration (HCFA) manual titled "Coverage Issue Manual, HCFA #6, Section 60-11, Home Blood Glucose Monitors." (Following my letter to Secretary Shalala, Section 60-11 is included as an attachment to this article.)

Any *Voice* readers experiencing difficulties with Medicare reimbursement for your glucometers, are invited to contact me, your editor. By sharing our difficulties we may be able to change and improve current reimbursement practices.

National Fee Schedule

The Fee Schedule is the stipulated range of costs established under Medicare Part B as a basis for reimbursement for purchase of durable medical equipment. E0609 is the Health Care Financing Administration (HCFA) specification for a blood glucose monitor with audio output. E0607 is the HCFA specification for a blood glucose monitor without audio output.

1. E0609:
   The National CEILING is $467.74
   The National FLOOR is $397.58
   Ceiling Reimbursement = 80% of $467.74 = $374.19
   Floor Reimbursement = 80% of $397.58 = $318.06

Federal law requires the actual cash reimbursement for equipment purchased under E0609 to fall within the above reimbursement range. Note that Medicare reimburses at 80% of "Approved Amount," in the range between National Ceiling and National Floor figures. Consumers please note:

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Voice of the Diabetic *is a national publication of The Diabetics Division of the National Federation of the Blind. It is read by those interested in all aspects of blindness and diabetes. We show diabetics that they have options regardless of the ramifications they may have had. We have a positive philosophy and know that positive attitudes are contagious!*

News items, change of address notices and other magazine correspondence should be sent to:

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What about those diabetic bow-wows and meows?

by Janet Lee

Janet Lee explains how administering insulin to pets with diabetes presents no great difficulty.

Janet Lee is the Coordinator of the Independent Management for Blind Diabetics program at Blindness: Learning In New Dimensions (BLIND), Inc. She is a Vice-President of The Diabetics Division of the National Federation of the Blind, and has been a diabetic for 31 years.

At BLIND, Inc., the focus of our Independent Management for Blind Diabetics program is the independent management of diabetes, but the question is: whose diabetes? Blind people, like other folks, often have responsibility for a dog or cat. These pets can develop diabetes.

Sharon Duffy, a long-time Federationist, is an instructor of typing and computers at BLIND, Inc. Prior to her move to Minnesota, she was an instructor of cane travel at the New Mexico Commission for the Blind. Sharon has a cat named Toby who became very ill. His coat was dull and matted, he stopped grooming himself, he lost a great deal of weight and started urinating in places throughout the house that a polite and healthy cat would not consider. Sharon's veterinarian diagnosed Toby as a diabetic.

Fortunately for Toby Sharon is an experienced blind person who knows that blind diabetics can manage their diabetes with the same flexibility as sighted diabetics. She saw no reason a blind person couldn't measure insulin for her cat. Sharon improvised insulin gauges using pieces of matchsticks until I could make her insulin gauges for Toby. He needed a series of gauges to accommodate his increasing need for insulin. We used a Swiss Army knife to cut popsickle sticks to be used as insulin gauges.

Toby began on a dose of five units of Ultra-Lente insulin and as he became healthier and gained weight it became necessary to increase his dose of insulin. Toby now weighs a healthy 14 pounds and is stabilized on ten units of Ultra-Lente insulin. Because Toby cannot tell Sharon when he is having an insulin reaction, he has food available all the time. His blood sugars are checked periodically and his insulin is adjusted based on the glucose levels.

According to John Baillie, DVM, of Cedar Pet Clinic, Minneapolis, Minnesota, dogs and cats in his practice develop diabetes with about equal frequency. Dogs can often be stabilized with one injection a day using NPH insulin. They usually stabilize and adapt to the routine of insulin injections, quickly gaining back their body weight and regaining their shiny coats. Cats seem to be a little trickier, requiring a longer adjustment period to establish a stable insulin routine. This is because they may require more than one injection of insulin a day and/or a combination of Lente and Ultra-Lente.

The doses required by cats and dogs are often very small. I usually recommend that the individual measuring insulin on behalf of his or her cat or dog use a Lo-Dose one-unit increment Count-A-Dose. The Lo-Dose Count-A-Dose is a very portable, durable device used by blind diabetics to measure insulin in one-unit increments. There is also a two-unit increment Count-A-Dose available which is used to measure larger doses. The Count-A-Dose, a very accurate device, employs completely non-sighted techniques. It consists of a rectangular base to hold the syringe and a T-shaped bar which holds the insulin vials. Included with the Lo-Dose Count-A-Dose are very specific instructions for blind people, in print and on cassette. The Count-A-Dose is available from Jordan Medical Enterprises, 12555 Garden Grove Boulevard, Suite 507, Garden Grove, California 92643; telephone: 1-800-541-1193, at a cost of $49.95.

Many of us who own pets have come to understand the torment the death of a pet can bring. There is no need for a blind person to accept euthanasia as the only option for a pet diagnosed as a diabetic. Blind people can measure insulin as accurately for their cats and dogs as blind diabetics measure insulin each day for themselves. Knowledge of insulin measurement devices for blind people, along with a veterinarian's instruction about administering insulin to your cat or dog, can restore your pet to health.

My thanks to Dr. John Baillie, Cedar Pet Clinic, 3447 Cedar Avenue South, Minneapolis, Minnesota 55407. Dr. Baillie is a nationally known expert in the treatment and care of birds and exotics. He breeds German Shorthaired Pointers for field trials and has very patiently answered all my questions about dogs, cats and diabetes.

Heart, blood vessel disease advances

by James A. Schoenberger, MD

Dr. James Schoenberger is a professor of preventive medicine, professor of medicine emeritus and Chairman of the Department of Preventive Medicine at Rush-Presbyterian-St. Luke's Medical Center in Chicago, Illinois.

Medical scientists have made great strides in perfecting techniques to treat damaged hearts and blood vessels.

Great advances have been made in the surgical treatment of heart and blood vessel problems, with the use of lasers, balloons and mechanical devices to unblock clogged arteries.

Newly developed medications have been found to ease symptoms and prevent further damage to the circulatory system and diseased muscles of the heart. The old standby aspirin has also been shown to be effective in lowering the risks for a second heart attack.

None of these advances in treatment, however, can match the benefits you can obtain from a prevention program. Prevention is still the key to lowering your risks for heart attacks and blood vessel disease.

As a person with diabetes, you need to be concerned with both prevention and treatment.

If you have Type II, noninsulin-dependent diabetes, you are at risk for cardiovascular disease, which is one of the major complications of this kind of diabetes. If you have Type I diabetes you are also at risk — as much at risk as any other adult (without diabetes) in the United States.

You have probably read much about the need to lower blood cholesterol levels to reduce your risks for cardiovascular disease.

Scientists have pinpointed the causes of hardening of the arteries (arteriosclerosis), which can lead to cardiovascular disease. The major culprit is believed to be low density lipoprotein (LDL), the so-called "bad" cholesterol.

Scientists are working to develop medications (perhaps antioxidants such as vitamins C and E) that protect blood vessels from the harmful effects of LDL.

Although scientists know that high density lipoprotein (HDL) — "good cholesterol" — plays a role in removing LDL from the blood vessel walls, they have not yet been able to develop a medication that specifically increases the levels of HDL in the bloodstream.

Some scientists believe that a reduced intake of saturated fat (from food) along with increased exercise may help improve the ratios of HDL to LDL.

For this reason, a reduction in dietary fat consumption and increased exercise is recommended for all Americans. As a person with diabetes, this should be made a high priority goal for you.

When diet and exercise fail to lower total cholesterol levels, your doctor may now prescribe any one of a number of medications. These medications have the ability to lower LDL cholesterol and/or lower triglycerides (other blood fats involved in cardiovascular disease).

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Heart, blood vessel disease advances

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Scientists have recently discovered that sustained lowering of blood cholesterol (by diet and exercise or diet, exercise and drugs) can also halt the progression of hardening of the arteries in people who have already developed this problem.

In some people, this treatment may also improve blood vessel health.

Hypertension

Diet, exercise and medication is the best combination attack on hypertension (high blood pressure).

Although it may not be possible for you to prevent the development of hypertension (you may have inherited this tendency), you can do quite a bit to keep your blood pressure within the normal range.

Weight loss is the cornerstone of any type of treatment program for hypertension. An ongoing weight loss program is the most effective method of lowering high blood pressure.

Regular exercise and a lower calorie diet can help you to achieve weight loss and then to maintain your "ideal" weight.

Many people with hypertension also need to avoid consumption of excess dietary salt (sodium). Alcohol consumption and smoking, too, should be avoided or severely limited.

If diet and exercise don't work to lower high blood pressure, your doctor can prescribe one of the many blood pressure–lowering medications now available.

Since hypertension rarely has symptoms you can feel or see, don't be tempted to stop taking prescribed medication just because you feel okay. Stay on the medication your doctor prescribes and get regular blood pressure measurements whenever you visit your doctor for a check-up.

If a medication starts to lose its effectiveness in controlling your blood pressure, your doctor can prescribe a different one — either alone or in combination with another medication you are now taking.

Some antihypertensive drugs may interfere with your ability to control your Type II diabetes by increasing your body's insulin resistance.

Fortunately, some of the newer medications (such as the calcium channel blockers and converting enzyme inhibitors) don't have this effect.

In fact, they may actually help reduce your body's insulin resistance.

Because of these newer developments, you should check with your doctor if you have not had a recent checkup and you have been taking a diuretic (water pill) or beta blocker for treatment of your high blood pressure.

(Note: Reprinted with permission of *Diabetes in the News*, published by the Ames Center for Diabetes Education.)

If you or a friend would like to remember The Diabetics Division of the National Federation of the Blind in your will, you can do so by employing the following language:

"I give, devise, and bequeath unto The Diabetics Division of the National Federation of the Blind, 1800 Johnson Street, Baltimore, Maryland 21230, a District of Columbia nonprofit corporation, the sum of $_____" (or "_____ percent of my net estate" or "the following stocks and bonds: _____") to be used for its worthy purposes on behalf of blind persons."

Insurance Coverage for Blind Workers: Some Facts You Should Know

Lorraine Rovig directs Job Opportunities for the Blind, a national job referral program for blind persons seeking employment and prospective employers.

This pamphlet is published by Job Opportunities for the Blind, a joint project of the National Federation of the Blind and the U.S. Department of Labor.

Misinformation about insurance coverage for blind workers deprives many businesses of the contributions blind workers could make. Job Opportunities for the Blind (JOB) wants you to know the facts. Here are answers to some of the most commonly asked questions about insurance and the blind.

Q: Will my insurance rates go up if I hire a blind person?

A: NO. Accident insurance rates are based on the actual experience of a company, compared with the experience of other companies in the same type of business. Individual characteristics of workers are not considered when determining a company's insurance rates.

Q: Are blind workers a higher insurance risk?

A: NO. Every study which has ever been done indicates that the safety records of blind employees equal or exceed those of sighted workers. In the terminology of the insurance industry, there is no actuarial evidence that blind workers are a greater risk.

Q: Some jobs are considered dangerous for anyone, would blind workers be insurable for those jobs, too?

A: YES. It is reasonable to assume that a blind worker faces the same risk as a sighted worker. Problems arise when employers assume that the blind are in greater danger. Simple alternative techniques exist which make it possible for blind people to do things which most people use sight to accomplish. Today blind workers operate power tools and other heavy industrial machinery safety and efficiently. Their employers do not pay higher insurance premiums.

Q: Do blind workers qualify for workman's compensation on the same basis as other workers?

A: YES. An employer who hires a blind worker may not be charged higher workman's compensation rates. Naturally, workers who are already blind when they are hired cannot collect workman's compensation based on blindness. It is equally true that, if a blind worker is injured on the job, blindness may not be used as a reason for denying benefits which would otherwise be payable.

Q: Do I have an obligation to inform my insurance company that I have a blind employee?

A: NO. Since blindness is not a lawful consideration in determining liability or accident insurance rates, your insurance company has no reason to know or care that you have hired a blind person. Blindness is as irrelevant to insurance coverage as race or religious affiliation, and questions about it from insurance companies are discriminatory.

Q: Is there something I can do if my insurance company refuses coverage or charges a higher rate because I have hired a blind worker?

A: YES. Give your agent a copy of this pamphlet and suggest that he or she consult officials at the insurance company's headquarters. The question of insurance for blind workers arises infrequently; this may be the first time your agent has dealt with the issue. Fear of exceeding authority may be at the heart of your agent's adverse decision.

If the insurance company's response is still negative, we can help. Job Opportunities for the Blind (JOB) staff and volunteer field service representatives are experienced in matters of insurance, non-discrimination law, and blind workers. We would be happy to provide your insurance company with complete information so that the company may make lawful decisions.

Discrimination against the blind is generally based on misinformation, not ill will. Most insurance companies will be glad to reassess their decisions when they know the facts.

Q: What is Job Opportunities for the Blind (JOB)?

A: Job Opportunities for the Blind is a project of the National Federation of the Blind in partnership with the U.S. Department of Labor. The National Federation of the Blind is the nation's oldest and largest organization of blind persons. Because JOB is managed by the blind themselves, we can draw upon the experiences of blind individuals in all walks of life. These people volunteer their time and talents to help their fellow blind find employment.

That same expertise is available to employers. If you want to know whether a blind person can do a particular job, chances are good that we know blind people engaged in similar work.

Q: How can Job Opportunities for the Blind help employers?

A: JOB can help you find qualified blind applicants to fill vacancies in your company.

- JOB can help you and your blind employees devise simple, often cost-free alternative techniques.
- JOB can provide you with the most current information about computers and other specialized devices used by blind workers.
- JOB can conduct workshops for your staff to provide them with correct information about blindness.

Q: How can an employer contact Job Opportunities for the Blind?

A: Write or call: Lorraine Rovig, Director, Job Opportunities for the Blind, 1800 Johnson Street, Baltimore, MD 21230; telephone: 800-638-7518, or 410-659-9314.

Hiring the blind: Good laws encourage it! Good sense recommends it! Good business demands it! And insurance is no barrier!

Medicare reimbursement for blood glucose monitors

(Continued from page 1)

ANY Medicare insurance carrier whose reimbursement amounts do not fall within the above range is in violation of federal law.

2. E0607:
   The National CEILING is $191.05
   The National FLOOR is $162.39
   Ceiling Reimbursement = 80% of $191.05 = $152.84
   Floor Reimbursement = 80% of $162.39 = $129.91

These blood glucose monitors are far less expensive than those covered under E0609, and the reimbursement amounts are consequently lower, but all of the same legal stipulations are as per E0609, above.

Diabetics Division
National Federation of the Blind
Columbia, MO
May 20, 1993

The Honorable Donna Shalala
Secretary of Health and Human Services
Hubert H. Humphrey Building
Washington, DC

Dear Secretary Shalala:
In my duties as First Vice President of The Diabetics Division of the National Federation of the Blind and as Editor of ***Voice of the Diabetic***, I have received many inquiries concerning Medicare reimbursement for blood glucose monitoring systems with voice enunciation. I believe you will be able to enlighten me on the correct procedures in the Medicare reimbursement process. It is my intent to publish this letter and your reply in an upcoming issue of the ***Voice*** (for your information, I am enclosing a recent issue). The ***Voice*** is distributed nationally to thousands of insulin-using diabetics including the blind and those losing vision, as well as to hospital educational services, medical facilities, rehabilitation centers, radio reading services, and libraries for the Blind and Physically Handicapped. Although this letter is lengthy due to the nature of varied problems, I would like to make you aware of specific areas affecting diabetics using Medicare.

Diabetes health care professionals have long known the importance of keeping diabetes under control by monitoring of blood glucose levels. The most effective and reliable way for diabetics to self-manage is by using specialized equipment called blood glucose monitors.

Several areas of concern exist for Medicare recipients in purchasing of and reimbursement for glucose monitoring systems. A mixed bag of misinformation is apparently disseminated to glucose monitoring system purchasers covered under Medicare part B. As a result, many blind, insulin-treated diabetics often receive no reimbursement or what appears to be incorrect amounts for such equipment. Other areas of concern include: gross disparity in percentage of reimbursement between sighted and blind diabetics, apparent inconsistencies in reimbursement from state to state, inconsistent and unreliable information from Medicare offices, and vendors who do not understand nor have correct information.

I am contacted regularly by blind, insulin-requiring diabetics, rehabilitation teachers for the blind, and health care professionals who express difficulties receiving Medicare reimbursement for their glucose monitors with voice enunciation. Many times the reference code number E0609 for monitoring systems with voice synthesizers is not used, while in other cases the correct code number is used but blind diabetics still have substantial difficulty receiving appropriate reimbursement for glucose monitors with audio output. Blind insulin-using diabetics should be able to self-manage their diabetes just as their sighted peers do.

There are two different categories of home blood glucose monitors. Medicare procedure code E0607 refers to monitors which sighted diabetics use. Code E0609 refers to monitors with audio output, used by diabetics who are blind or have severe vision loss. Section 60-11 regarding Home Blood Glucose Monitors in the Health Care Financing Administration manual titled "Coverage Issue Manual, HCFA #6," describes both types. (The phrase "several different types of blood glucose monitors" refers to varieties of both types.) Both types are recognized as being eligible for Medicare reimbursement providing the diabetic meets requirements as specified in Section 60-11. (For your convenience, a copy of section 60-11 is attached to this letter.)

For purpose of clarification, the following terms are used by HCFA for durable medical equipment (in this case, glucose monitors):

(1) "The approved amount" is the officially approved price of an item on which reimbursement is based.

(2) "The amount reimbursed" is 80% of the approved amount.

(3) "The Fee Schedule" is the national average cost determined by Medicare's insurance carriers. The Fee Schedule is the highest approved amount anywhere—the "ceiling"; the program "floor" of 85% of the "ceiling" is the lowest approved amount Medicare uses to calculate reimbursement. In other words, the lowest approved amount is 85% of the Fee Schedule. The current Fee Schedule—the ceiling—for standard glucometers is $191.05; for glucometers with audio output it is $467.74.

One area of confusion involves the incorrect use of Medicare procedure code numbers required under Medicare part B. For some reason the code number E0609 is sometimes not used on documentation for monitors with audio output. Perhaps this is due to an oversight on the part of the vendors who complete Medicare paper work; perhaps they are unaware of a special number for such equipment even though it's listed in the Medicare reference books. I know of cases in which the correct code was used and yet those persons had substantial difficulty receiving appropriate reimbursement.

Perhaps the problem lies in definitions accompanying each code. For example, the Texas Commission for the Blind, which serves about 3600 diabetic clients per year, noticed a problem when Medicare would pay for the cost of a non-adaptive meter but would not pay for an adaptive meter. When the Commission inquired about the criteria for an adaptive meter versus a non-adaptive meter, suppliers informed the Commission that a glucometer was considered adaptive if it had a porthole that could be used with an ear plug, be hooked up to a computer, or if it had a fairly large display. Thus, vendors considered every meter as adaptive. However, when true adaptive meters—those with audio output—became readily available, the price was much higher yet the reimbursement amount remained the same. This was because the vendors used the code E0609 (the code for meters with voice) for glucose monitors without audio output. The Commission was having to pick up the difference between the amount reimbursed from Medicare and actual cost of glucometers with voice output. However, I'm told that a new Medicare ruling stated vendors could accept only ONE payment as reimbursement which prevented the Commission from paying the vendors the balance after Medicare payment. As a result, the Commission could not find a vendor who would sell a glucose monitor with voice output to Medicare clients or to the Commission because Medicare reimbursement was too low. Since it was mandated that the Commission could not reimburse vendors, the Commission sometimes buys monitors and informs blind clients why they don't use Medicare. This makes me wonder how many blind Texans have to do without needed equipment which would allow them to self-manage their diabetes.

Sources in Texas inform me that Medicare approves $189.00 for E0607 (the ceiling is $191.05). Because retail price for standard glucometers seldom exceeds $191.05 nationally, Texas Medicare recipients are most likely to receive a full 80% of the actual retail cost. In Texas the approved amount for E0609 (talking glucometer) is $276; 80% of this is approximately $221, the amount Medicare apparently reimburses. However, HCFA Guidelines dictate the lowest and highest approved amounts ranging from $397.58 (floor) to $467.74 (ceiling). It appears that blind Texans are being reimbursed $221 which is $97.06 to $153.19 less than HCFA rules mandate. Out of pocket expenses for blind Texans should range from $93.55 to $149.68 as mandated by HCFA guidelines ceiling of $467.74. But since Texas is not in compliance with HCFA guidelines, blind Texans pay $246.74 out of pocket. Compared to what sighted diabetics, who use E0607, are reimbursed, blind diabetic Texans are very definitely being discriminated against!

To compound the problem, we know that talking glucometers currently range from $395.00 (One Touch II with a Digi Voice Synthesizer) to an average of $650.00 (Accu-Chek II Freedom System). Even if blind Texas Medicare participants were covered at the Fee Schedule ceiling of $467.74, those using the Freedom System would have to pay anywhere from

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Medicare reimbursement for blood glucose monitors

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$275.81 to $318.06 out of pocket. However, because the Fee Schedule apparently does not apply in Texas, blind diabetics purchasing the Freedom System are having to pay the $429 out of pocket.

Considering that an estimated 70% of the blind are unemployed or underemployed, they are less able to pay higher prices. Consequently, they often do without the equipment or have to become dependent on another person to check glucose levels. Unfortunately, I have heard health care providers state that if a diabetic becomes blind from retinopathy, "he or she does not usually have to worry about testing glucose levels because a friend or family member can do it for them." Must the blind person be FORCED to rely on the presence of a sighted friend every time a glucose test is needed? Contact with thousands of blind diabetics indicates the vast majority desire to ***be independent*** and test their own glucose levels.

Another area of concern is the wide variation in amount of Medicare reimbursement from state to state. For example, I'm told that in Texas, for a glucose monitor with voice synthesizer (an adaptive meter—code number EO6O9), Medicare will reimburse $221 for a "Freedom" meter. As noted above, national retail price is about $650. However, I understand that in Oklahoma, Medicare allows the approved amount to be $800 for "Freedom" or any truly adaptive meter, which would mean that reimbursement would be $600. As you can see there is a great difference in reimbursement amounts for the same equipment in two contiguous states. An Idaho researcher was told the approved amount is 80% of the retail cost, whatever it is. On April 12, a Virginia consumer talked with the supervisor of the Medicare program in that state. He was told that about two years ago Medicare stabilized all its allotments across the country and they pay the same percentage of the same allotments no matter where you live. He was also told that Medicare's computer was the only one that could tell them what the allotment was for talking and nontalking glucometers and the computer would not tell you anything until a prescription had been received. In other words the supervisor would not provide the approved amount without first having a prescription. Also, this information is inconsistent with that from various state Medicare programs as well as HCFA guidelines in regard to the "Omnibus Budget Reconciliation Act of 1990" used to determine Fee Schedules which were fully implemented as of January 1, 1993.

I receive reports from various locations letting me know that there is much conflicting information being disseminated by different Medicare offices. As stated above, I realize the reimbursement amount varies from state to state. One report from Oklahoma indicated that Medicare would reimburse 70% to 80% depending on retail cost. Another Oklahoma source reports an actual approved amount ($800.00) while a third gave reimbursement amounts in percentages. Georgia Medicare is no exception to dispensing inconsistent information. A Georgia consumer informed me that on two different occasions calls were made to the state Medicare office. Different figures were provided for the same items. This investigation revealed reimbursement for EO6O9 is about $221 which is 80% of $276. Considering the retail price range for a talking glucometer in the current market is $395-$650 nationally, in Georgia as in some other states, blind diabetics must shell out more money than the sighted. During the second call to the Medicare Consumer Office, an inquirer was told that Medicare would pay 80% of the approved amount but would not state the figures for either E0607 or E0609.

In California, one inquirer was told reimbursement is 80% of whatever vendors charge (retail cost) whether the monitor has audio output or not. Another California source reported the approved amount for EO6O7 is $194.69, which is higher than the Fee Schedule. The same source was told the approved amount for EO6O9 is $408.15, yet the Fee Schedule is $467.74. I find it odd that in California the sighted are approved an amount higher than the ceiling while the blind are approved just slightly above the floor! In Connecticut, reimbursement goes on a case by case basis. The Medicare Consumer Office would not give amounts unless the inquirer had the product number and product code. With a nationally mandated fee schedule, how can Connecticut go on a case by case basis? Out of curiosity, in January 1993 I called the Social Security Office in Stamford regarding Medicare. I was told there was no local number to reach the Medicare office and was instructed to call an 800 number. However, when I attempted to call, I discovered that particular 800 number was not accessible from out of state. In effect, I was unable to reach Medicare in Connecticut. What if I were a traveling Connecticut resident needing Medicare services? What would I do?

As another example, I was told that in 1992 the Missouri Consumer Medicare Office listed their approved amount for talking glucometers (EO6O9) as $443.16. Yet when I called the Missouri Medicare Professional Relations Office, I was given the approved amount for EO6O7 (non talking glucometer) and was told they did not have a definite approved amount for EO6O9. I made subsequent calls to each office in April 1993. The Consumer Office informed me that Medicare reimburses 80% of the approved amount for both types of monitors; but, its personnel did not know the approved amount for either. This is an inconsistency in information coming from the same office. During the second call to the Professional Relations Office I was told the approved amount for EO6O7 is $202.96. This figure strikes me as odd because it is more than the Fee Schedule! Where should consumers and professionals inquire for reliable, consistent information?

For your convenience and for the sake of comparison, I've made the following chart which provides some of the cost variations in different parts of the country for EO6O7. Following the chart, you'll find information on talking glucose monitors (EO6O9). Prices

Costs in Various Locations for E0607—Nontalking Glucose Monitors

ITEM	CA	ID	OK	MO	GA	NY
One Touch I	$ 64.85	64.88	56.99	—	69.99	59.95
	53.99	60.00	—	—	—	—
	—	78.88	—	—	—	—
One Touch II	126.99	129.00	124.99	119.99	119.97	121.00
	129.99	129.00	—	—	139.47	129.95
	114.99	147.59	—	—	—	—
ExacTech Companion	59.99	59.99	—	59.95	—	—
	79.00	—	—	—	—	—
Companion 2	—	—	110.49	99.95	—	—
	—	—	96.99	—	—	—
Tracer	60.00	50.00	—	—	—	—
Tracer II	—	—	39.99	38.99	39.87	38.95
	—	—	—	—	45.10	44.99
Ames Glucometer	—	—	179.00	—	—	—
	—	—	165.00	—	—	—
Glucometer 3	39.99	—	46.99	—	39.87	—
Pen 2 Sensor	—	—	96.99	—	—	—
Diascan SVM	—	—	149.97	213.00	—	—
Accu-Chek Easy	79.99	79.99	69.99	98.00	—	—
	—	69.00	—	—	—	—
Accu-Chek II	—	—	79.99	79.99	—	67.00
	—	—	—	—	—	67.00
	—	—	—	—	—	69.95
Accu-Chek III	89.99	89.99	79.99	—	—	79.95
Exact Check	—	—	—	—	—	200.00

STATE	RANGE OF COST	RANGE OF MEDICARE REIMBURSEMENT FIGURED AT 80% OF COST*
CA	$39.99 -$129.99	$31.99 -$103.99
ID	$50.00 -$147.59	$40.00 -$118.07
OK	$39.99 -$179.00	$31.99 -$143.20
MO	$38.99 -$213.00	$31.19 -$152.54
GA	$39.87 -$139.47	$31.90 -$111.58
NY	$38.95 -$200.00	$31.16 -$152.84

*Retail costs rarely exceed the Fee Schedule for E0607

E0609 Glucose Monitors With Voice Synthesization

Only two brands of glucose monitors with voice synthesization are currently available. The Lifescan One Touch II costs about $400. The Accu-Chek II Freedom System currently retails for an average of $650. Two other brands, awaiting FDA approval, are the Diascan Partner which will cost $395 and the Vision bG with an estimated cost of $600 to $700. The Accu-Chek II Freedom System is composed of one unit which contains the glucose meter and voice system. The Lifescan One Touch II System is composed of two box-like units, the meter and the voice box, which are attached with a patch cord.

Costs and Other Figures for E0609

		Approved amt, Fee Schedule		Medicare reimbursement range		Out of Pocket consumer expense range	
Item	Retail ***Cost***	***Ceiling***	***Floor***	***High***	***Low***	***Most***	***Least***
Freedom System (Average)	$650.00	$467.74	$397.58	$374.19	$318.06	$331.94	$275.81
Lifescan One Touch II	$395.00 (Cost falls below floor)			No Range Reimbursement Amt: $316.00		$79.00	

quoted do not include rebates, special discounts, taxes, or handling charges. Brand names, not manufacturers, are listed. Three vendors were randomly called in each of the following locations: Sacramento, CA; Twin Falls, ID; Tulsa, OK; Columbia, MO; Albany, GA; and Syracuse, NY. Some vendors carried more than one product.

Areas of Concern Regarding EO6O9: Because most vendors do not carry glucose monitors with voice output, blind Medicare recipients encounter considerable difficulty locating such equipment. EO6O9 monitors are extremely expensive compared to EO6O7 and vendors do not routinely stock them. For example, among nine retail vendors in Columbia, Missouri, none stock EO6O9. However, one supplier stated that he would special order it but would not accept Medicare assignment. The same supplier said he carried nine different brands of EO6O7 and would accept assignment for those. As participating suppliers, vendors who carry glucose monitors with voice output must accept Medicare assignment. Compared to nontalking meters, the profit margin is not as great and vendors don't turn over monetary investment as quickly by stocking glucose monitors with voice. Simply put, selling talking glucometers is often not cost effective. Additionally, as indicated in the chart, the consumer has to pay so much more out of pocket for talking glucometers compared to nontalking meters because of inequity in the Medicare system in percentage of reimbursement. Another problem is that physicians and vendors are often unaware of the availability of talking glucometers and fail to enlighten the blind diabetic.

As stated above, Georgia and Texas reimbursement is $221 which is 80% of $276. Considering the retail price range for a talking glucometer in the current market is $395-$650 nationally, in Georgia as in some other states blind diabetics must shell out more money than the sighted.

As mentioned above in the discussion of Texas, there may be a problem on a national level in definition of what constitutes an adaptive glucometer. The failure to understand the definition of an adaptive glucometer is evident in the upgrading of existing equipment. After losing sight, some diabetics will continue using existing equipment, the nontalking glucometer, and add a separate voice synthesizer which is available for use with one particular brand. It's my understanding that the same code number, EO6O9, is used for a glucometer with voice output as well as for the voice box component purchased separately. Apparently there is no individual Medicare code number for such components. Because the voice box would obviously cost less than a completely brand new glucometer with voice output, vendors, not the consumer, gain because of the lack of a separate code number for component parts.

Related to this problem is Medicare policy regarding reimbursement within the same two year period for purchase of EO6O7 and E0609. For example, a diabetic buys a nontalking glucometer and receives Medicare reimbursement; within two years the diabetic becomes legally blind and needs EO6O9—either voice box or a completely new unit. It is my understanding that Medicare will not reimburse for the new equipment purchased within a two year period. Since blindness has changed the situation, Medicare should cover needed equipment.

In recent inquiries to medical equipment vendors that bill Medicare, I've discovered a problem exists because suppliers often do not have the book listing procedures a patient must follow in order to receive reimbursement under Medicare Part B. In some cases local suppliers had only procedure code numbers and no information regarding the criteria for consumer reimbursement. Many suppliers are branches of chain operations and receive only a small portion of the manual from their home offices. They have procedure code numbers but no criteria for consumers. This may be due to the expense of the book which I understand is about $80.00.

For whatever reason, confusion exists. Far too many people are failing to receive the stated reimbursement. Please keep in mind that many blind diabetics do without equipment that would allow them to self-manage because of Medicare confusion. As you know, lives of diabetics depend on keeping diabetes under control. In "Diabetes in the United States: A Strategy for Prevention" (1993), the Centers for Disease Control and Prevention estimate that 15,000-39,000 persons become blind each year from diabetes. Quality of life and independence are as important for blind diabetics as for anyone else.

I have outlined what I understand to be fact as well as concerns regarding Medicare reimbursement for blood glucose monitoring systems with audio output. I would appreciate your reply to my letter and the following questions and requests. As I've mentioned, both pieces of correspondence will be printed in the ***Voice of the Diabetic*** and should provide clarification and information needed by many people.

Queries and Requests

1. Please send a list showing the state-by-state approved amounts for Medicare Procedure Codes EO6O7 and EO6O9. Currently it is impossible to ascertain if eligible recipients are receiving the amounts listed in HCFA guidelines.

2. Is there an official reference pamphlet/booklet for *purchasers* of blood glucose monitoring equipment? Consumers covered by Medicare need access to the regulations. (As I've mentioned, some suppliers have only a small portion of the information from the reference manual.)

3. Sometimes blind diabetics, as well as many other consumers, receive incorrect or contradictory information from Social Security and Medicare offices. What can be done to eradicate dissemination of incorrect information? Numerous examples are listed in the text. Why are consumers being told that information isn't available, or is only available with a prescription or some other requirement?

4. My data show that Medicare has not given the same kind of consideration to equipment for the blind as it has for the sighted. The national average cost for EO6O7 is $89.63, which is $101.42 BELOW the fee schedule ceiling. Yet the national average cost for EO6O9 is $522.50 which is $54.76 ABOVE the fee schedule ceiling! What can be done to correct this situation which is not fair to blind citizens?

5. Why do some insurance carriers deviate greatly from the established Fee Schedule ceiling and floor? Is HCFA aware of this problem? What will you do to eradicate this disparity?

6. Are your people aware that, as per "*HCFA Coverage Issue Manual* #6," Section 60-11: "Lancets, reagent strips, and other supplies necessary for the proper functioning of the device [home blood glucose monitor] are also covered for patients for whom the device is indicated"?

7. On April 27, 1993 Medicare's Missouri Professional Relations Office reported an approved amount of $202.96 for EO6O7. This figure does not comply with the fee schedules. What can be done to ensure that accurate, up-to-date information is dispensed by Medicare offices?

8. Are Fee Schedule increases mandated? If so, when will the increases occur?

9. Because Fee Schedules are already known, why is it easier to obtain information on nontalking blood glucose monitors than on monitors with audio output?

10. Some Medicare offices will divulge amounts and others will not; some provide official figures while others provide incorrect figures or say they don't have the information. Why does this situation exist and what can you do to correct it? Why the hesitancy to dispense information to consumers?

11. In the event that a consumer is in conformity with all rules and regulations, yet still does not receive the correct reimbursement, what courses of action are open to that consumer?

12. Are Texas, Georgia and other such states in violation of the law regarding the fee schedule for EO6O9?

13. Blind consumers often experience considerable difficulty locating any supplier for talking glucose monitors. What can HCFA do to help blind consumers find participating suppliers?

Medicare rules, regulations, and guidelines are inconsistent and complicated. My research verifies that even government officials do not understand them. A consumer ought to be able to figure the amount of Medicare reimbursement and the amount out of pocket without having to have a Ph.D. in economics! Please simplify the Medicare regulations. The current cost in human terms is extreme frustration and bewilderment on the part of many blind diabetics who must use Medicare.

To repeat, thousands of blind men and women would appreciate your response to the aforementioned matters. If you have questions please contact me. I thank you in advance for your help and await your response.

Most sincerely,
Ed Bryant,
First Vice President, Diabetics Division
National Federation of the Blind
Editor, ***Voice of the Diabetic***

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Health Care Financing Administration manual *Coverage Issue Manual, HCFA # 6*, Section 60-11, "Home Blood Glucose Monitors":

There are several different types of blood glucose monitors which use reflectance meters to determine blood glucose levels. Medicare coverage of these devices varies, both with respect to the type of device and the medical condition of the patient for whom the device is prescribed.

Reflectance colorimeter devices used for measuring blood glucose levels in clinical settings are not covered as durable medical equipment for use in the home, because their need for frequent professional recalibration makes them unsuitable for home use. However, some types of blood glucose monitors which use a reflectance meter specifically designed for home use by diabetic patients may be covered as durable medical equipment, subject to the conditions and limitations described below.

Blood glucose monitors are meter devices which "read" color changes produced on specially treated reagent strips by glucose concentrations in the patient's blood. The patient, using a disposable sterile lancet, draws a drop of blood, places it on a reagent strip

(Continued on page 8))

Medicare reimbursement for blood glucose monitors

(Continued from page 7)

and, following instructions which may vary with the device used, inserts it into the device to obtain a reading. Lancets, reagent strips and other supplies necessary for the proper functioning of the device are also covered for patients for whom the device is indicated. Home blood glucose monitors enable certain patients to better control their blood glucose levels by frequently checking and appropriately contacting their attending physician for advice and treatment. Studies indicate that the patient's ability to carefully follow proper procedures is critical to obtaining satisfactory results with these devices. In addition, the cost of the devices, with their supplies, limits economical use to patients who must make frequent checks of their blood glucose levels. Accordingly, coverage of home blood glucose monitors is limited to patients meeting the following conditions:

- *The patient must be an insulin-treated diabetic;*
- *There must be documentation by a physician of poor diabetic control, i.e.,*
  - *widely fluctuating blood sugars before meal time;*
  - *frequent episodes of insulin reactions; or*
  - *evidence of frequent significant ketosis;*
- *The patient's physician states that the patient is capable of being trained to use the particular device prescribed in an appropriate manner. In some cases, the patient may not be able to perform this function, but a responsible family member can be trained to use the equipment and monitor the patient to assure that the intended effect is achieved. This is permissible if the record is properly documented by the patient's physician; and*
- *The device is designed for home rather than clinical use.*

There is also a blood glucose monitoring system designed especially for use by those with visual impairments. The monitors used in such systems are identical in terms of reliability and sensitivity to the standard blood glucose monitors described above. They differ by having such features as voice synthesizers, automatic timers, and specially designed arrangements of supplies and materials to enable the visually impaired to use the equipment without assistance.

These special blood glucose monitoring systems are covered under Medicare if the following conditions are met:

- *The patient and device meet the four conditions listed above for coverage of standard home blood glucose monitors; and*
- *The patient's physician certifies that he or she has a visual impairment severe enough to require use of this special monitoring system.*

The additional features and equipment of these special systems justify a higher reimbursement amount than allowed for standard blood glucose monitors. Separately identify claims for such devices and establish a separate reimbursement amount for them. For those carriers using HCPCS, the procedure code and definition is: E0609—Blood Glucose Monitor—with special features (e.g., voice synthesizers, automatic timer, etc.)

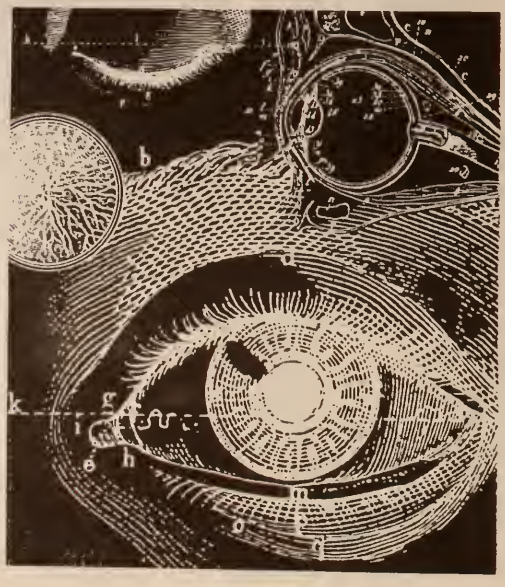
Answers to your questions about diabetes and your eyes

What is diabetes?

Diabetes is a disease that prevents your body from making or using insulin to break down sugar in your bloodstream.

How does diabetes affect the eye?

Diabetes and its complications can affect many parts of the eye. Diabetes can cause changes in nearsightedness, farsightedness and premature presbyopia (the inability to focus on close objects). It can result in cataracts, glaucoma, a lack of eye muscle coordination (strabismus) and in decreased corneal sensitivity. Visual symptoms of diabetes include fluctuating or blurring of vision, occasional double vision, loss of visual field and flashes and floaters within the eye. Sometimes these early signs of diabetes are detected in a thorough optometric examination. The most serious eye problem associated with diabetes is diabetic retinopathy.



What is retinopathy?

Diabetic retinopathy occurs when there is a weakening or swelling of the tiny blood vessels in the retina of your eye, resulting in blood leakage, the growth of new blood vessels and other changes. If diabetic retinopathy is left untreated, blindness can result.

Can vision loss from diabetes be prevented?

Yes, in a routine eye examination, your optometrist can diagnose potential vision threatening changes in your eye that may be treated to prevent blindness. However, once damage has occurred, the effects are usually permanent. It is important to control your diabetes as much as possible to minimize your risk of developing retinopathy.

Are there risk factors for developing retinopathy?

Several factors that increase the risk of developing retinopathy include smoking, high blood pressure, drinking alcohol and pregnancy.

How can diabetes-related eye problems be prevented?

Monitor and maintain control of your diabetes. See your physician regularly and follow instructions about diet, exercise and medication. See your optometrist, an eye care specialist, for a thorough eye examination when you are first diagnosed as a diabetic, at least annually thereafter and more frequently if recommended.

How is diabetic retinopathy treated?

In the early stages diabetic retinopathy can be treated with laser therapy. A bright beam of light is focused on the retina, causing a burn which seals off leaking blood vessels. In other cases, surgery inside the eye may be necessary. Early detection of diabetic retinopathy is crucial.

(Note: This fact sheet reprinted courtesy of the American Optometric Association.)

Insulin: Therapy for life

by Janice Cigich, RPh

Janice Cigich, RPh has been a certified pharmacist for over 16 years. A graduate of the University of Pittsburgh, she is working on her master's degree in preparation for national certification as a health education specialist.

To 1.5 million people with diabetes, insulin therapy is as much a part of life as eating or sleeping.

Insulin enables the body to properly utilize carbohydrates, especially a sugar called glucose. When the body doesn't produce enough insulin, as in diabetics, an insulin product must be given. These products are manufactured by various pharmaceutical companies.

Administration of these insulin products temporarily restores the body's ability to metabolize carbohydrates. Although the insulin is an effective replacement therapy, it isn't a cure for diabetes. It's extremely important for patients who need insulin therapy to precisely carry out their dosage instructions. Without insulin, high levels of glucose will remain in the blood and may cause a number of problems, including damage to the kidneys, eyes, and other vital organs.

What is Insulin?

Insulin is one of many hormones produced by the pancreas. The hormone-secreting cells are called Islets of Langerhans. Insulin is a protein composed of two amino acid chains, fermed A and B, which are joined by chemical bonds called disulfide linkages. When insulin is being produced in the pancreas, it starts with three chains. The third chain keeps the hormone inactive and is removed before insulin release.

All commercially available insulins come from four sources: beef, pork, beef-pork mixtures, or biosynthetic sources. Beef insulin differs slightly from human insulin. Pork insulin differs from human insulin even less.

Biosynthetic insulins, known as "human" insulins, use an advanced scientific technology involving recombinant DNA to create a structure identical to human insulin. Large amounts of this "human" insulin can be produced when a bacteria called E. Coli is given a human gene to be inserted into its own genetic code. Every time that area of the bacterial DNA is read, "human" insulin is produced.

In addition to species sources, insulins are categorized by their strength, purity, onset, and duration of action. All of these are considered when determining the most effective insulin treatment for a patient.

Strength and Purity

The strength of insulin is always expressed in United States Pharmacopeia (USP) units. The potency is standardized according to its ability to lower blood glucose concentrations. Most diabetics use Unit (U)-100 insulin. Some U-40 and U-500 insulins are also available.

The purity of insulin is determined by the amount of impurities and proinsulin (an insulin building block) in the product.

"Purified" insulins have fewer impurities and proinsulin than standard insulin has. This causes fewer adverse reactions. Biosynthetics are the purest of all insulins. They contain no proinsulin whatsoever.

Insulin Categories

There are three categories of insulin used to define the onset and duration. Onset is the amount of time it takes for insulin to begin working in the body. Duration is the amount of time the insulin will continue to work. These categories are:

	ONSET (hrs.)	DURATION (hrs.)
Rapid Acting	1/2—1-1/2	6—12
Intermediate Acting	1—2-1/2	16—24
Long Acting	4—8	36

Insulin is only available in injection form and is usually administered with a syringe under the skin. If taken orally, the product would be rendered inactive by stomach acid. Insulin is administered with precisely marked and calibrated syringes or with specialized delivery devices that are newer to the market of diabetic supplies.

Although most insulins are available without a prescription, a physician must match the patient's specific insulin needs to the most suitable insulin product and determine individualized dosages. Insulin products aren't easily interchangeable. All changes should be made under medical supervision.

Except for regular insulins, all types are cloudy in appearance and need to be mixed by slowly rolling the bottle between the hands or by gently tipping the bottle upside down several times. The vial should never be shaken vigorously. Mixing types of insulin together should only be done when directed by a physician. The insulins being mixed must always be drawn into the syringe in the same order.

Words to the Wise

All insulin packages are marked with an expiration date. This date only applies to unopened insulin that has been kept refrigerated. Unopened vials should be kept in the refrigerator. However, avoid freezing. An open vial of insulin being used for daily injections can be stored at room temperature for up to one month.

Although insulin therapy helps patients control their blood sugar levels, they should be aware of the symptoms they may experience if this balance isn't maintained. High blood sugar levels (hyperglycemia) can develop into ketoacidocis, a life-threatening condition which requires prompt diagnosis and treatment to prevent the patient from lapsing into a "diabetic coma."

Symptoms of high blood sugar include thirst, frequent urination, acetone odor on the breath, and occasional nausea or stomach pain. Low blood sugar levels (hypoglycemia) can occur suddenly and often arise from administering too little insulin, getting too much exercise, or not eating enough.

The most common symptoms of low blood sugar or "insulin shock" include shaking, cold sweats, dizziness, weakness, headache, and confusion. Commercial products containing a rapid-acting sugar are available for use by diabetic patients to counteract blood sugar levels that are too low. Patients should notify their doctors if they experience any of these symptoms, so the physician can adjust the treatment.

For insulin therapy to succeed, the diabetic patient must understand the nature of the disease — how to control the condition and detect complications. Patients requiring insulin therapy should wear diabetic identification so appropriate treatment can be given in an emergency.

Monitoring blood sugar levels, administering insulin correctly, following dietary restrictions, and maintaining contact with medical supervision are all essential for the patient's well-being.

(Note: Reprinted by permission from *For Patients Only*, September/October 1992, published by Contemporary Dialysis, Inc., 20335 Ventura Blvd., Suite 400, Woodland Hills, CA 91364-2451.)

Diabetes — the road to determination

by Kimberly Blake

From the Editor: Kimberly Blake has experienced health problems that go far beyond diabetes. During conversations with Kimberly, I find her inspiring and vibrant. This young lady tells me she has had difficulties in life but will not let them get her down. "I live one day at a time."

Kimberly Blake is a fighter. She will not hide herself in some corner, and she will not quit trying to accomplish her goals. I feel proud to know her. Here is her story.

My diabetes appeared when I was ten. Three months after my birthday, I was losing so much weight that a teacher complained to my mother that I was skinny as a rail. I was tired, thirsty, and extremely constipated.

My first blood sugar test was extremely high. The doctor ordered a glucose tolerance test, but when the technician gave me the glucose solution to drink I almost vomited. My blood sugars were so excessively high that the test could not be completed.

I was quickly hospitalized and placed on insulin to stabilize my blood sugar. I was in the hospital several weeks.

Things were fine for about three years. Then, without warning, my blood sugar dropped. My mother, my physician, and my boyfriend were all very worried.

At that time I began having numerous other health problems. Mononucleosis sent me to bed for a month. My thyroid began acting up, and hyperthyroidism medications had no effect. The Columbus, Ohio hospital evaluating my thyroid rejected surgical alternatives because, not only was my diabetes out of control again, I had been born with only one kidney.

Other health problems developed through the years. I began having seizures. I'd be doing something, and the next moment, mother would be putting smelling salts in my face. I'd wake up not remembering where I was or what I'd been doing. The electroencephalogram (EEG) revealed I had psychomotor epilepsy, and the doctors put me on phenobarbital and dylantin. These medications worked, but only for a time. My seizures went out of control again, and back in the hospital, the doctors switched me to tegratol. Now I have very few seizures except when there is something physically wrong with me.

I also developed multiple sclerosis (MS). My symptoms included weakness, numbness, fatigue, and dizziness. My left leg dragged when I became tired. The magnetic resonance imaging (MRI) scan and my symptoms allowed my neurologist to identify MS as my latest health problem.

Next I developed hydrocephalus. I began having pressure headaches, and experienced difficulty walking. Two neurectomies helped for a time, but the symptoms persist to this day. *(Editor's Note: hydrocephalus is excessive cerebrospinal fluid build-up on the brain, and a neurectomy is the surgical excision of part of a nerve.)*

The only diabetic complication I have developed is diabetic neuropathy. I developed problems reading and writing Braille. I would involuntarily drop things. This neuropathy is throughout my body. It is not easy to conquer this particular complication.

I am glad there are no further complications yet. I don't know what I'd do if any others developed. But, in spite of all the medical conditions, I go on. Because of the neuropathy there are things I cannot do, such as drawing my own insulin, giving myself a shot, or even testing my own blood sugars. But I don't allow my limitations to keep me from accomplishing what I want in life.

When things straighten out, I want to go to college. I would like to study music, writing, and medical transcription. I am not sure which one will be my major. I might major in all three!

I want to be independent, and I'm determined to do it no matter what it takes. Whatever happens, my faith in God remains strong. I know He will remain with me as I achieve the goals I have set out to accomplish.

Book review of *Solutions: Access Technologies for People Who Are Blind*

by Olga Espinola and Diane Croft
Published by National Braille Press, Inc., 1992

Reviewed by David Andrews

David Andrews, Director of the International Braille and Technology Center for the Blind, thoroughly evaluates a new book from the National Braille Press.

From the Associate Editor: David Andrews is the Director of the International Braille and Technology Center for the Blind, which is located at the National Center for the Blind. Probably no one in the country knows more about the whole range of access technology for blind people than Mr. Andrews, so it seemed appropriate to ask him to review Solutions, the new book written by Olga Espinola and Diane Croft and published by the National Braille Press. Here is what he has to say:

Every day in the International Braille and Technology Center for the Blind I receive countless telephone calls, many of which ask the same group of questions: "Which screen review program is the perfect one for me?" "What speech synthesizer sounds the best?" "Tell me everything you know about scanners in one minute or less!" "Which is better, the Kurzweil or the Arkenstone?" "What Braille printer should I buy?" I do not try to avoid answering any of these questions, but there isn't a simple answer to most of them. I usually say, "it depends..." What does it depend on? Well, on the person's budget, work situation, prior knowledge and experience, current personal computer or computer being accessed, and much more. When a person has some previous experience with computers, it may be possible to ask a few questions in order to arrive at the right answer. However, with beginners this can be difficult. They may not know what they want or need. They don't have enough knowledge to answer the questions, and they may not know what is available or possible. These people need a starting place. With its recently published book *Solutions: Access Technologies for People Who Are Blind*, National Braille Press (NBP) of Boston, Massachusetts has provided us with such a place. The book was written by Olga Espinola and Diane Croft and is available in Braille, print, cassette tape, and computer disk.

It seemed appropriate to evaluate the book in the light of the goals and target audience set by the authors. Consequently I talked to Diane Croft, who is Director of Marketing at National Braille Press and has four other technology books to her credit. Croft said, "The target audience of the book is the beginner, the person who doesn't think that he or she needs a computer." She says that the goal of the book is to "get people started, to increase their familiarity with the technology and the language and to get them to take the next step towards buying a system." The authors also hope to help people make an informed choice between speech and Braille access.

I read my first NBP computer book back in 1984. It was *A Beginner's Guide to Personal Computers for the Blind and Visually Impaired*, published in November of 1983. I can still remember devouring the book in a single sitting. Recognizing the power of the computer and what it could do for me really turned me on; and, because I now make my living working with the beasts, I realize in retrospect that the book probably changed my life. I also devoured NBP's subsequent books: both editions of *A Second Beginner's Guide* and *Add-ons*. However, because I now eat, sleep, and breathe computers and access technology, no introductory book of this kind can ever again turn the world upside-down for me in quite the same way.

So, to aid me in my evaluation of *Solutions*, I enlisted an old friend, Ed McDonald, President of the NFB of West Virginia and a beginning computer user. Ed has owned and used a VersaBraille II Plus and VersaPoint Braille printer from Telesensory for some time but has resisted stepping up to a personal computer, even though he knows he would benefit. Ed said of the book, "I thought it was factual and informative. It brought together and systematized a lot of information I had heard here and there. It whetted my appetite to get into the computer business, and I think I will take the next step sooner than I would otherwise have done."

I agree with Ed McDonald. While I have specific quibbles with the book, I think that it does meet its general goals. It is a starting place for beginners. It will give them some basic knowledge about computers and access technology, introduce the major products, and provide a set of questions to use in further investigations. It also has a good vendor list at the back.

When I met with Croft, she emphasized that she knew there were inaccuracies in the book, such as addresses or phone numbers that have changed, and that portions of the book — particularly the section on scanners and optical character recognition systems — were outdated. Though the book is not perfect both Ed McDonald and I found it to be informative and useful. It made a good start but left both of us wanting more.

The book begins with an introduction that provides an overview. It uses the metaphor of a ride along Boston's Freedom Trail, which will appeal to some and seem silly to others.

Chapter 1 begins with a discussion of the basics, including operating systems and their functions, utility programs, and more. Next there is a good discussion on how computers display information for sighted users and what this means to blind users. It includes a description of the Graphical User Interface (GUI), pronounced "gooey." This chapter, while it has much good information, does not provide all the basic computer knowledge the beginner needs. The novice should do other reading in addition or take a course in computer literacy from a community college or other provider.

Chapter 2 discusses basic information on word processing and related utilities for writing and reading. Chapter 3 provides information about records management, including databases, spreadsheets, and time-management and project-management software. If you don't know what all that means, you will just have to buy and read the book. Chapter 4 concerns itself with telecommunications, including modems, networks, terminal emulators, fax, file transfer, and more.

"Electronic Reading Services" is the title of chapter 5, and it includes discussions of CD-ROMs and electronic reading services for the blind, including RFB's E-Text program, the Reader Project, SoftServ, and what Espinola and Croft call "Computerized Voice-Reading Systems." Under this last category they place dial-up services such as NEWSLINE for the Blind in New Mexico and California as well as a computer-delivered newspaper system operating in Sweden. While dial-up services are useful and important, they seem a little out of place amid the purely computer-access material. They operate using a computer, but the end user doesn't need to know why or how that is so. The book never explains that, although callers use the touch tones of a telephone to control the system and choose newspaper sections and articles, they actually hear human voices reading the material. The computer is used as a storage and control medium only.

Part II of the book addresses the specifics of access technology and will probably be of prime interest to most readers. Chapter 6 discusses choosing an appropriate access method: synthesized speech, Braille, or a combination of the two. It provides a list of questions designed to guide the user. Beginners will find this section useful and informative. For the most part the book fully and honestly discusses the advantages and disadvantages of both speech output and Braille, but it hardly mentions large print at all. Croft said that the topic was too big and difficult to deal with, given the scope of the present project. I agree with her, although a paragraph about why it wasn't included might have been desirable.

For most people the heart of the book will be the information on screen review programs, speech synthesizers, and other access products. With a few exceptions this book, unlike previous publications from NBP, does not provide comparative product reviews. According to the authors, they asked vendors to describe the unique features of their products in two hundred words or less. They then verified the claims and tossed out all mention of those features included in two or more programs. The authors then provided basic information about the products and included a section discussing special features.

I think there are two disadvantages to this method. Ed McDonald pointed out the first. He said that the language used to describe features and the amount of information needed by the reader to evaluate each claim are not consistent from one product discussion to the next. Second, this method does not give the reader a feel for any of the products discussed. The book could have benefitted immeasurably from the addition of a thumbnail sketch of each product reviewed.

Further, not all the features listed as unique to a given product are, so in these cases, only one producer has been given credit for a feature shared by others. I do not mean to suggest that such product features should have been ignored; often they are important, and the authors were correct in describing them.

For example, three programs (ASAP, JAWS, and MasterTouch) offer the ability to identify important information on the screen automatically without the need to employ special program configurations. Thus, by the

authors' guidelines, the feature shouldn't have been mentioned. However, it is an important function and warrants inclusion, but credit should have been given to all three. Another example of inconsistency occurs in the mention of an automatic reading feature. Two programs are listed as incorporating this (ASAP and Artic), but I know that others have it as well. Further, the book provides no information on how well a given feature works, just that it is part of the program.

The book says that programming is necessary to set up IBM's Screen Reader. This is not true, although programming is necessary to modify its Profiles. The book also states that one must take apart the computer to install an internal speech synthesizer. Strictly speaking, this may be true, since one must remove the cover and a small plate (slot cover) from the back of the machine; but this is quite simple to do and does not constitute an invasion of the inner workings of the actual computer. The phrase "taking apart your computer" implies a more substantial foray into electronics than is actually involved.

Finally, the book does review most, but not all, of the available screen review programs. The authors say that they reviewed major products only, but they were so close to reviewing everything that they should have gone all the way. The only things left out were the CompuSite Reader (HAL in England), PROVOX, SlimWare, the Speaqualizer, and the Verbal Operating System (VOS). The exclusion of VOS is interesting because the book does mention the Verbette, a synthesizer sold by Computer Conversations, which wrote VOS, the only program that supports the Verbette. Further, the Speaqualizer and CompuSite Reader do receive mention elsewhere in the book. On the other hand, ISOS and Tinytalk (neither of which is a major product) were reviewed. This decision was sensible since both have important features: ISOS allows one to access Prodigy, a graphics-based on-line service; and Tinytalk is the only screen review program distributed by the shareware method — try it before you buy it.

Chapter 8 is devoted to Braille devices. I am pleased to report that this book continues the National Braille Press's commitment to making a strong case for Braille. However, the chapter leaves out mention of devices from one company, Papenmeier of Germany. They make two Braille displays and a note taker/Braille display, the two Braillexes and the Notex respectively.

Chapter 9 discusses Braille embossers and translators. This chapter provides good information although a number of printers, including the Index Basic, Ohtsuki, and Braillo 90, were omitted; and there is little mention of the quality of Braille produced by the different machines. The Braille 'n Speak and the BrailleMate, the hybrids in the Braille-production family of equipment, are the concern of chapter 10.

Chapter 11 deals with reading and scanning systems. This may simultaneously be the most useful and least satisfactory chapter of the book. Its strength is that the information here is more comparative than that in other chapters. However, there have been a number of developments in the optical character recognition market since the book was published, so some of the information is necessarily outdated. Actually this is not a strong criticism because the problem is unavoidable. Diane Croft says that a product update section will be added in six months or so. Chapter 12 covers foreign-language products. This will be useful for anyone needing such information, which is not readily available to most people.

Finally, to close section II, there is a discussion of new products, that is, things that had been on the market for less then six months at the time of publication. These include the Nomad and MasterTouch from HumanWare, the Franklin Language Master 6000 talking dictionary, the DragonDictate voice input system, and the Alva Braille Carrier. If you need additional information about these devices, the International Braille and Technology Center for the Blind has all of them on display.

Section III of the book focuses on people. It opens with interviews of six blind-access-technology users. The interviews are powerful testimonies for the use of technology by blind persons. They also drive home the need for good Braille skills and the advantages of using Braille in our work and daily lives. Anyone who is considering access technology (buying a first computer, looking for a job, or trying to use new technology on the job) should find chapter 14 interesting reading.

Chapter 15 is a verbatim tele-conference held between the authors of the book and ten access-technology trainers. Topics include on-site versus classroom training, individual versus group instruction, teaching methods, choosing technology, etc. Ed McDonald felt that the Trainers' Forum didn't read well. He thought it would have been more effective on tape than it was in Braille. I agree. I found this the least useful portion of the book. Some discussion of training is needed; however, much of the information is of interest only to trainers and experienced users. A focused discussion of training would have been better and would have saved space, which could then have been used to expand other parts of the book.

Finally, chapter 16 is a very brief discussion of the Americans with Disabilities Act (ADA). This seemed somewhat out of place. The information is both general and abbreviated and is tied into the book only with the comment that the ADA calls for "reasonable accommodations," and access technology can be such an accommodation.

The remainder of the book is devoted to a set of appendices, which are quite useful. Appendix A is a series of questions to ask when buying access technology. The questions are complete and useful. Croft told me that they are primarily intended for use by Management Information Systems professionals within companies considering acquiring access technology for blind employees, but the book does not make this clear. The questions are written from the perspective of the end-user. Most beginners would be unable to answer the questions for themselves, but they are nonetheless very good.

Appendix B is a brief list of training centers, while Appendix C contains information on funding sources. Appendix D is a list of computer bulletin boards and on-line services: NFB NET is listed, although with the wrong area code (301 instead of the correct 410). This is interesting because the proper 410 area code is given for the Blazie Engineering BBS. Appendix E is a list of blindness-related computer publications. Appendix F contains product listings. Finally, Appendix G is a list of addresses and phone numbers for vendors of access technology.

Despite what some may believe to be nitpicking on my part, I consider *Solutions* a good and worthwhile book. I do think it will help the beginner. Its wording could, however, have been a little more precise in some areas and the text a little more complete. Its major failing is that it tries to cover too many subjects. The danger of trying to be all things to all people is that you risk becoming nothing to anyone. This is not the case with *Solutions*, but the book would have benefited from a tighter focus. Both Ed McDonald and I came away feeling that something was missing, that we wanted more. It is like what some people say about Chinese food: it tastes great and seems filling at the time, but you are hungry again in an hour. If you expect to use this book to make a decision on the perfect screen review program or synthesizer or Braille printer, then you will be disappointed. It will get you started and give you lots of questions to ask and a framework for understanding the answers, but it won't make your decision for you.

Solutions: Access Technologies for People Who Are Blind is available from National Braille Press, Inc., 88 St. Stephen Street, Boston, MA 02115, telephone (617) 266-6160. The book is available in Braille audio cassette, regular print, and IBM-compatible computer disk for a cost of $21.95. Add $3.50 for all print orders and for any other order that you do not want shipped Free Matter for the Blind. NBP accepts Visa and MasterCard.

(Note: This article appeared in the January 1993 issue of the ***Braille Monitor,*** published by the National Federation of the Blind.)

Dear friends

The Diabetes Treatment Center of Houston, Texas asked its past and present patients to comment on measures that family members or friends can take to better support the person with diabetes. Only minor editing was made to the following responses.

If you have comments that would help others better understand diabetes, please send them to the ***Voice*** editor.

• Keep your weight down to avoid problems from diabetes.

• Even though you think your diabetes is under control, it does not do any good to go ahead and have that sweet roll whenever you just feel the urge to have one.

• Please! Do not try to help me with my problem unless you are asked to do so. You may think you know what I should or should not eat, however, sometimes I must eat a piece of candy or consume a sugar drink. My body and my glucometer tell me what I need, not well meaning friends who are not acquainted with the problem. Only if I faint act drunk or lose control and no experts are present should you help. Then I probably need sugar or glucose.

• Having type-I (insulin dependent) diabetes with other illnesses such as arthritis, I tire out much faster especially when standing, working, shopping, etc. I have to rest more often. I cannot go on long trips like I used to without stopping for stretching my legs, going to the restroom (due to other medicines I take), or getting something to eat or drink. I cannot skip meals as I did before.

Ask the Doctor

by Wes Wilson, M.D.

(**NOTE:** If you have any questions for "Ask the Doctor," please send them to the ***Voice*** editorial office. The only questions Dr. Wilson will be able to answer are the ones used in this column.)

Wes Wilson, M.D. is an Internal Medicine practitioner at the Western Montana Clinic in Missoula, Montana. Dr. Wilson was diagnosed with Type I diabetes in 1956 during his second year of medical school.

I plan to marry a person with diabetes. Can I "catch" the disease?

This question can be answered quickly. No, you cannot develop diabetes as a result of close contact with someone who has diabetes.

There should be further discussion on the genetics of this disease, however, since there is definitely a genetic factor involved in both Type I (insulin-requiring) and Type II (non-insulin dependent) diabetes.

The genetic factor seems to be much stronger in the Type II diabetic than in those with Type I, but there certainly is higher risk of developing diabetes if other blood relatives have either Type I or Type II diabetes.

The inherited abnormality in Type 2 diabetes seems to include a tendency to obesity and insulin resistance so that even if insulin is present it seems much less effective in controlling metabolism.

The message of importance is that if there is diabetes in your family, exercise and maintenance of ideal weight are particularly important since these measures can certainly delay the development of Type II diabetes.

I have a lot of insulin reactions, but I'm not always sure when they are coming even though I test my blood sugars, eat snacks and do all the things I am supposed to do. Can you tell me why this is so and what I can do about figuring out some way of knowing when an insulin reaction will occur?

Hypoglycemia unawareness is the medical term used to describe the inability to sense that the blood sugar is too low. This is a troublesome and potentially dangerous development seen in some individuals who use insulin. It seems to be increasing and the exact explanation is uncertain. Several years ago there was much discussion and concern that human insulin might be somehow responsible, since some individuals treated with human insulin developed hypoglycemic unawareness. This problem usually appears after years of insulin treatment of diabetes and in my opinion seems to occur predominantly in individuals who are attempting tight control. We all know that when insulin is used in an effort to keep the blood sugar (hypoglycemia). It seems to me that the problem results form exhaustion of the usual hormonal response to low blood sugars. Normal persons or persons with diabetes treated with insulin who can detect symptoms of hypoglycemia respond to low blood sugar with outpouring of epinephrine and glucagon. The epinephrine causes pallor, sweating, anxiety, pounding heart and many symptoms that we feel are typical of hypoglycemia. If the epinephrine response to hypoglycemia is lost these troublesome but important warning signs are lost and a person may first show signs of hypoglycemia by altered brain function manifested by altered vision, confusion, irritability, or loss of consciousness. Some persons describe "diabetic crazies" in which they have weird thoughts or most unusual behavior. The real problem is that without the epinephrine-caused "early warning symptoms" the hypoglycemia may be more severe and can lead to injury or accident. During the confusion it's not unusual for the person with low blood sugar to refuse to take glucose or sugar since they don't realized the problem is an insulin reaction.

It is important to understand that some medications called Beta Blockers can cause hypoglycemic unawareness since they block the action of the epinephrine.

It sounds as though you are carefully controlling your diabetes but sometimes we must be willing to accept a bit higher blood sugar to allow a little "safety margin" to avoid potentially serious hypoglycemia. A person with diabetes must be a good detective, remembering that even slight increases in exercise or slight reductions in diet can lead to hypoglycemia. You must always be aware of the risk of low blood sugar ... it must always be on your mind.

Be sure to routinely check blood sugars at 1 or 2 a.m. (once or twice each week) since many persons who take several shots of insulin per day may have low blood sugars during sleep (especially if they use human insulin at dinnertime) and never awaken. By morning the sugar may have increased even without any "rescue" measures. I'm suspicious that the relation of hypoglycemia unawareness to human insulin may be related to frequent insulin reactions at night and thereby exhaustion of the epinephrine response.

My suggestions then are:

If you are currently taking a Beta Blocker drug, use extra care, and confer with your physician.

Check sugars frequently, especially if there is a change in routine.

Be suspicious of low sugars at all times and be willing to run sugars a bit higher than you have in the past.

A letter to the editor

*From the Editor: We receive much correspondence from diabetics and health care professionals who enjoy the **Voice** and appreciate its information about diabetes and blindness. It is important that the health care team and patient work together. The following letter is a good example of a health professional whose primary interest is the education of patients, families, and the care team. We are delighted to furnish the extra copies, free of charge, and stand ready to do the same for anyone else, upon request. We publish four times a year.*

Barbara Carraher
Alaska Kidney Center
Anchorage, Alaska
May 10, 1993

Voice of the Diabetic
Columbia, Missouri

Dear Sir or Madam,

I am excited to be able to order enough copies of ***Voice of the Diabetic*** to give one to each of our patients who have diabetes. Your publication is excellent as a source of both patient and professional education. The one copy we have been receiving gets a great deal of use circulating among people and with xerox copies of articles posted on our bulletin board. It will be really great to have enough copies so they can also be taken home for families to read. Since a third of the people in our dialysis program are diabetic, I'd like to request 30 copies of each issue. I can assure you they will be USED! Thanks very much.

Sincerely,
Barbara Carraher, ACSW/LCSW
Social Worker

Book review of *When Diabetes Complicates Your Life*

by Joseph Juliano, M.D.

reviewed by Ed Bryant

Joseph Juliano, M.D., an insulin-requiring diabetic, has written a new book which explains diabetes and the importance of keeping it under control.

When Diabetes Complicates Your Life, by Joseph Juliano, M.D., takes a unique perspective toward managing diabetes and its long-term effects. Its author is an endocrinologist and diabetes researcher who has lived with his own diabetes for 29 years. Blind from diabetic retinopathy, he shares his experiences with honesty and directness. He stresses the positive, while explaining the long-term complications, using his unique perspective as both patient and medical professional.

Dr. Juliano writes, "Please always keep in mind that knowledge is power. The more you know and understand diabetes, the more powerful your control." The book discusses complications that can affect the eyes, kidneys, nerves, and blood vessels, as well as the latest approaches toward avoiding or minimizing such complications. Dr. Juliano also covers (with the frankness of experience) the emotional impact of diabetes and the importance of a positive outlook.

Following is the table of contents: When the News Hits Home; My Story; Nerves and Circulation; Kidneys; Eyes; Lows, Highs, and Deadly Acids; Monitoring; Machines for Measuring Glucose; Insulin Insights; Painless Injections; Insulin Delivery Systems; Current Theory and Treatment; Meal Planning Guidelines; Exercise Guidelines; Brain Power and Positive Thinking; On a Daily Basis; Reading List.

After reviewing this book, I can without hesitation recommend its purchase.

When Diabetes Complicates Your Life, by Joseph Juliano, M.D., is available from Chronimed Publishing, P.O. Box 47945, Minneapolis, MN 55447-9727; phone: 1-800-848-2793. Cost is $9.95, plus $3.00 for shipping.

Diabetes, Complications, Options

The Diabetics Division of the National Federation of the Blind

A Support and Information Network for Diabetics

From the Editor: The Diabetics Division of the National Federation of the Blind now has a pamphlet titled "Diabetes, Complications, Options." This pamphlet is attractive and explains our outreach programs. The publication disseminates essential information and reaches out to anyone who has an interest in diabetes and blindness.

Unlimited free copies are available to anyone interested in helping to spread the word. This pamphlet is great for seminars as well as libraries, pharmacies, physicians' offices, hospitals, and so on. "Diabetes, Complications, Options" may be ordered from the National Federation of the Blind, Materials Center, 1800 Johnson Street, Baltimore, MD 21230; telephone: (410) 659-9314. Following is the pamphlet reprinted in its entirety.

Diabetes is a *chronic disease*. If you are one of the estimated fourteen million people who have diabetes, YOU ARE AT RISK.

- Blindness and Vision Problems
- Kidney Failure
- Loss of Limbs
- Nerve Damage
- Sexual Dysfunction
- Heart Attack and/or Stroke

If you have diabetes, YOU NEED The Diabetics Division of the National Federation of the Blind.

- Upbeat, grassroots, volunteer diabetic support group
- National support and information network
- Publisher of the magazine ***Voice of the Diabetic,*** written by and for diabetics
- Reaches out to diabetics to promote independence
- Demonstrates diabetics have options
- Provides diabetics with proven coping strategies
- Established by blind diabetics — serves BLIND and SIGHTED diabetics

If you are diabetic, YOU NEED the Diabetics Division and the Diabetics Division NEEDS YOU.

The Diabetics Division

The Diabetics Division of the National Federation of the Blind (NFB) is a dynamic support and information network that serves blind and sighted diabetics, their families, and health care professionals. A grassroots organization, the Diabetics Division was founded in 1985 by blind, diabetic NFB members who recognized that the leading cause of new blindness in adults is diabetes and that all diabetics are at risk to develop any of the ramifications of the disease: Blindness, Loss of Limbs, Nerve Damage, Kidney Disease, Heart Problems, Stroke, Sexual Dysfunction, etc. All work and services, except for part-time clerical help, are accomplished by volunteers.

Magazine: *Voice of the Diabetic*

The most far-reaching means of communication and information is the ***Voice of the Diabetic,*** a quarterly magazine. Each issue features personal, candid stories written by diabetics and other persons who want to share their experiences and/or expertise regarding diabetes and its complications. The stories reflect the upbeat, personal dimension of the Diabetics Division. The articles demonstrate that diabetics have options in spite of side effects.

Emphasizing diet, good diabetes control, self-reliance and independence, the ***Voice*** is an outreach publication. The ***Voice*** features a "Recipe Corner" that lists diabetic exchanges and a column of medical questions answered by an insulin-dependent physician. A resource column of aids and appliances provides valued information to blind diabetics so they can manage their diabetes independently. With selected advertising, the ***Voice of the Diabetic*** provides a forum of coping strategies for and by individuals who deal with diabetes. The ***Voice*** is available in print and/or cassette tape. (Tapes are recorded at 15/16 inches per second to accommodate tape players used by the legally blind.)

Other Publications and Information

The Diabetics Division of the NFB compiles and publishes up-to-date lists of suppliers of aids and appliances. This Resource List is available in print, on cassette tape, or in Braille. The updated Diabetic Food Exchange List in Braille and/or cassette is now available. Other information is published as needs arise in the national network.

Person to Person Support

With care, commitment, and understanding, committee members of the Diabetics Division provide information and encouraging support on a person-to-person basis for diabetics. The Support Committees reach out with listening ears and helping hands to diabetics with needs in the following Committee areas: Blindness/Visual Dysfunction, Amputation — Prevention and Treatment, Get Well, Heart Disease and Stroke, Insulin Pump, Legislative Issues, Pancreas Transplantation, Resource Library, Resources (Aids and Appliances), Renal Failure — Dialysis and Kidney Transplantation, Sexual Dysfunction/Male Impotence.

Membership Benefits

Membership benefits include a continuing free subscription to the ***Voice of the Diabetic,*** access to other publications, and to members of the Support Committees. This national networking also provides free counseling to members. Members of the Diabetics Division automatically become members-at-large of the National Federation of the Blind. The ***Voice of the Diabetic*** is offered free to any interested person upon request. Publication expense for each subscription is $20 per year. To defray expenses, members are invited and nonmembers (institutions) are encouraged to cover the subscription cost. Although there is no membership fee, donations are gladly accepted and appreciated. Contributions are not only tax deductible but are needed to keep the ***Voice*** and the Diabetics Division moving forward to help people with all aspects of diabetes.

For further information, to subscribe and/or become a member, to submit an article, to order a complimentary copy of the ***Voice*** (specify print and/or cassette), or to communicate in general, please contact: ***Voice of the Diabetic*** Editorial Office, 811 Cherry St., Suite 309, Columbia, MO 65201; telephone: (314) 875-8911.

Publication of the ***Voice of the Diabetic*** began in 1986 with a circulation of 600. Circulation has grown prolifically to more than 61,000. SHOULDN'T YOU JOIN THIS DYNAMIC, GROWING SUPPORT NETWORK? If you are diabetic, the ***Voice of the Diabetic*** can be YOUR VOICE.

The National Federation of the Blind

The National Federation of the Blind, the parent organization of the Diabetics Division, was founded in 1940, and has more than 50,000 members nationwide. It is an organization dedicated to creating opportunity for all blind persons. In addition to the Diabetics Division services, the NFB gives scholarships to blind students, provides advocacy, educates Congress on issues concerning the blind, and promotes employment for blind persons. Although capable and desirous of employment, almost seventy percent of blind persons remain unemployed or underemployed. Job Opportunities for the Blind (JOB) is a national job referral program which has helped more than 1,000 blind persons find employment. JOB is dedicated to breaking the barriers that prevent blind persons from becoming part of the mainstream. In addition to those services mentioned here, the NFB provides many other services for blind persons. Send requests for information for NFB services to the following address: National Federation of the Blind, 1800 Johnson Street, Baltimore, MD 21230; telephone: (410) 659-9314.

Avoiding sugar: Does research support traditional beliefs?

by Marion J. Franz, MS, RD, CDE
International Diabetes Center
Minneapolis, Minnesota

Recommendations for the use of sucrose for persons with diabetes have evolved from complete avoidance to modest amounts being allowed if metabolic control and body weight are acceptable.[1] What research has lead to this more relaxed stand on sucrose? And should this position be reevaluated for the 1990s? Use of both added and naturally occurring sugars in the diabetes diet traditionally was restricted because of the belief that sugars would be too rapidly absorbed, and for fear of aggravating hyperglycemia. Although these are commonly held beliefs, there was little or no research to substantiate the claims.

The traditional rule for people with diabetes to avoid sugar may have been good advice, but it may have been given for the wrong reasons. Because sugars are small molecules, they were believed to be more rapidly digested and absorbed than complex carbohydrates (starches), which are larger molecules. And because this untested theory seemed to make so much sense, it became widely accepted dogma. Standard advice to people with diabetes was to avoid simple carbohydrates — both added (sucrose and foods containing sucrose such as candy, cookies, ice cream, cola) and naturally occurring sugars (fruits and fruit juices) — because they would be immediately absorbed and cause a rapid rise in blood glucose levels, rapid fluctuations in blood glucose levels, and an increased need for insulin. Complex carbohydrates — starches such as breads, cereals, potatoes, rice, etc. — were recommended because they would take longer to be absorbed and would result in a slower and more moderate rise in blood glucose levels and less need for insulin.

The Big Surprise

The first investigator to challenge the traditional theory was Phyllis Crapo, RD. An earlier study[2] had reported that advising persons with diabetes to eat starches rather than sugars really didn't make much sense. The reasoning was that the body has an abundance of amylases — enzymes that break down starches into glucose — in the digestive tract that convert starches to glucose almost immediately.

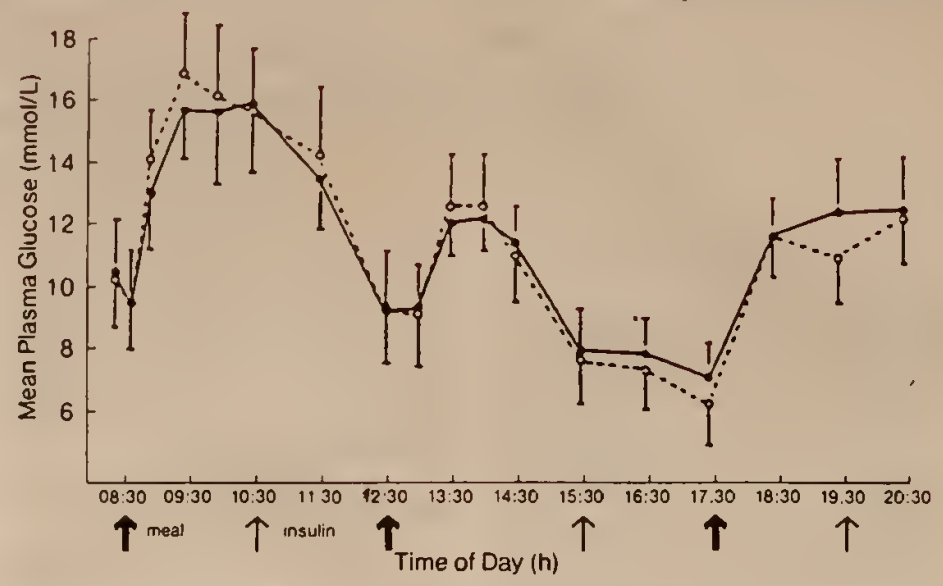
To determine which advice was correct, Crapo decided to test drinks of sugar and pure uncooked starch. Compared with the sugar drink, the starch drink caused virtually no rise in blood glucose.[3] Fortunately, Crapo carried this evaluation one step further. Since pure uncooked starch is hardly a typical food, she and her colleagues fed volunteers different cooked starches (rice, potatoes, corn bread) and dextrose (glucose). To their surprise, they found some differences in the blood glucose responses, but the differences were not related to the starches versus dextrose.[4,5]

The studies by Crapo et al demonstrated that equal grams of carbohydrate from sugar and various starches resulted in different postprandial glucose responses in people without diabetes, as well as in people with impaired glucose tolerance (IGT) or non-insulin-dependent diabetes mellitus (NIDDM). The responses, however, were not related to the popular theory of sugar versus starch. Rather, the total amount of carbohydrate was just as important as the source of the carbohydrate.

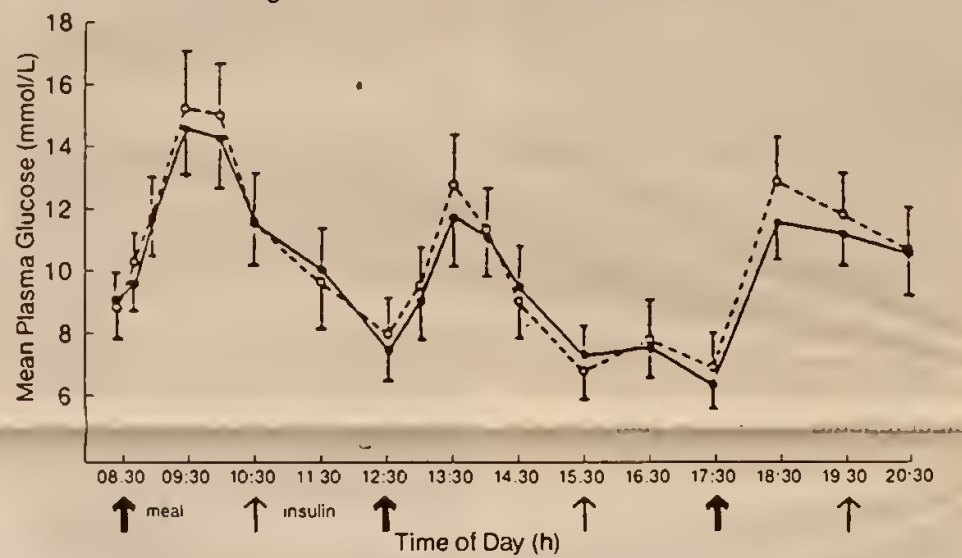
The results of studies by Crapo et al[3-5] and Bantle et al[6] prompted media coverage in the popular press, claiming that eating potatoes is just like eating candy as far as diabetics are concerned. (Keep in mind, however, that 50 grams of carbohydrate from an added sugar is the equivalent of three tablespoons of honey or 1/4 cup maple syrup compared with 50 g of carbohydrate from a starch such as three medium-sized potatoes. It certainly is much easier to put 1/4 cup of maple syrup [average portion size] on pancakes or French toast than to eat three potatoes, although both would contribute the same amount of carbohydrate.)

Continued Discoveries

Following Crapo's studies, a number of other investigators conducted similar research. Bantle et al[6] compared breakfasts containing equal amounts of carbohydrate, protein, and fat from common foods, but from different carbohydrates — glucose, fructose, sucrose, potatoes, wheat — accounting for 24% or 25% of the total calories. Participants in the studies were persons without diabetes and persons with insulin-dependent diabetes mellitus (IDDM) and NIDDM. The researchers reported that meals containing sucrose did not produce a higher rise or increase in blood glucose levels than meals containing potato, wheat, or glucose. Meals containing fructose resulted in a lower glycemic response, even though the results were not always statistically significant. All carbohydrates required equal amounts of insulin to be metabolized. Because pure sucrose or a meal containing predominately sucrose as the carbohydrate was not studied, the researchers commented that their studies did not exclude the possibility that responses different from those they observed might be found. They concluded, however, that when the amounts of carbohydrate were equal, sucrose (or glucose) consumed in a mixed meal did not produce a more rapid rise or a higher peak in blood glucose levels than other starches or carbohydrates.



A. Blood glucose values throughout the day for persons with IDDM after six weeks on the two different diets. The solid black dots indicate levels after eating the diet of complex carbohydrates and the open dots indicate levels after eating the sucrose-containing diet.



B. Blood glucose values for persons with NIDDM. The solid black dots indicate levels after eating the diet of complex carbohydrates and the open dots indicate levels after eating the sucrose-containing diets.

Figure 1. *Day-long blood glucose levels for a sucrose-containing diet and complex carbohydrate diet in (A) persons with IDDM and (B) persons with NIDDM. Reprinted with permission from Peterson DB, et al.*[11]

This first study was criticized because only one meal was studied, which could not in itself determine any day-long or long-term effects of sugar consumption. In their next study, Bantle et al[7] compared sucrose (23% of calories), fructose (21% of calories), and all carbohydrate content from starches consumed for eight days. In a randomized, cross-over design, three isocaloric diets containing 55% of the calories from carbohydrate, 15% from protein, and 30% from fat, with the different sources of carbohydrate, were fed to persons with IDDM and NIDDM. Again, no differences between the sucrose and starch diet were reported as long as the total grams of carbohydrate were equal. The fructose diet did, however, result in lower blood glucose levels than the starch diet. Furthermore, the sucrose and fructose meals did not increase triglyceride levels compared with the starch diets.

Since that time, a number of investigators have substituted sucrose for starch and reported similar results. Slama et al[8] measured the hyperglycemic effect of sucrose (20 g) taken at the end of regular mixed meals by persons with IDDM controlled by an artificial pancreas, and by persons with NIDDM that was well controlled at the time of the study. The meals contained equal amounts of calories and carbohydrate. No difference between the meals in terms of plasma glucose curves and plasma insulin infusion rate variations were reported in either group.

Two other studies[9,10] also demonstrated no deleterious effects of sucrose, even in large amounts, when used in single meals. Chantelau et al[9] studied patients with IDDM controlled on insulin pumps and Jellish et al[10] studied persons with hypertriglyceridemia and diabetes in variable degrees of control and being treated by diet alone. However, the ultimate test of the acceptability of sucrose use by

persons with diabetes must come from long-term studies.

The results of a long-term study by Peterson et al[11] are shown in Figure 1. The study involved 12 persons with IDDM and 11 persons with NIDDM eating diets containing 53% of the calories from carbohydrate, 55 g from fiber, and 27% of the calories from fat. However, in one series of diets, 45 g of starch given daily at meals was replaced with 45 g of sucrose (15 g at each of three meals). The sucrose diet was followed for six weeks and the effects were evaluated; the comparison diet then was followed for six weeks. Participants were randomly assigned to the two diet groups so as to not prejudice the results. At the end of six weeks, there was no difference between the two diets in the day-long blood glucose levels. Cholesterol (total and lipoprotein fractions), diurnal triglyceride levels, plasma insulin profiles (in persons with NIDDM), medications, or body weighl also were unchanged. This finding suggested that substituting sucrose for starch daily at mealtimes in a high-fiber/low-fat diet does not cause a deterioration either in blood glucose or blood fat levels.

Abraira and Derler[12] also reported that a more than 75-fold difference in sucrose intake (220 g versus 3 g)with a constant carbohydrate intake (50% of total calories) and fat intake (35% of total calories) for one month did not affect repeated fasting or postprandial glucose levels, 24-hour glycosuria, glycohemoglobin levels, or triglyceride and cholesterol levels in subjects with NIDDM receiving no medication. Twelve subjects with preexisting high triglyceride levels (>150 mg/dL) actually had lower postprandial triglyceride levels when in the high sucrose diet group.

The previous studies substituted sucrose for other carbohydrates. However, what about adding sucrose to the usual diets of persons with NIDDM? To answer this question Colagiuri et al[13] studied subjects with well-controlled NIDDM (diet alone or control by sulphonylureas) in a double-blind, cross-over design with six-week study periods. During the sucrose period, 45 g of sucrose (9% of total daily energy) was added, 10 g (approximately 2-1/2 teaspoons) with each meal and 5 g (approximately one teaspoon) with each between-meal beverage. An equivalent sweetening quantity of aspartame was ingested during the aspartame period. The addition of sucrose did not have a deleterious effect on glycemic control, lipids, glucose tolerance, or insulin action. Furthermore, no differences were observed between sucrose and aspartame. The authors cautioned, however, that the subjects' diabetes was well controlled and that sucrose was used solely as an additive. Their results should not be extended to include, for example, bakery goods (desserts) or confectionery that may also have a high fat content. For example, Peters et al[14] substituted a piece of chocolate cake for a baked potato (the calories and carbohydrate were equal) in a meal given to adults with IDDM and reported no differences in the glucose response between the two meals. However, when they added the cake to meals without making a substitution, the blood glucose response (30.8 mM [555 mg/dL]/4 h) was significantly greater than with the standard meal and the cake-substituted meals (20.2 mM [365 mg/dL]/4 h).

Loghmani et al[15] evaluated exchanging sucrose for starch in the diets of children with IDDM. They compared the short-term glycemic effects of a traditional sucrose-free diet (2% of total calories from sucrose) with a sucrose-containing diet (10% of total calories from sucrose) in ten children. The diets were followed for two days in a cross-over design. The similar glycemic response to the two diets with and without sucrose is illustrated in Figure 2. This study is limited by its short duration (two-day study periods). Longer outpatient studies in children are needed to examine potential cumulative effects of sucrose ingestion.

The authors made two other interesting observations from this study regarding the use of sucrose. First, the incorporation of more than 10% of the total calories as sucrose in place of other starches would be difficult to achieve. Within the carbohydrate prescription (50% of total calories), few carbohydrates would remain for sandwich bread at lunch, starchy vegetables, or pastas at supper. Second, to maintain an ideal ratio of unsaturated to saturated fatty acids, recipes containing sucrose (bakery goods) would need to be modified because most sucrose-containing foods contain more total and saturated fatty acids than their starch counterparts.

Sugar in Snacks

In most of the studies, sucrose was substituted for starch in meals. However, what happens if sucrose is substituted and eaten for a snack? To study this, Steel et al[16] compared midmorning snacks containing 20 g of carbohydrate (a large fruit or one starch serving) from sucrose, fructose, or starch. They measured blood glucose levels every 30 minutes for two hours after four different snacks were consumed by persons with IDDM or controls. No significant differences were found in blood glucose levels from the four different snacks. From this finding, they concluded that sucrose need not be excluded from snacks and that fructose may not be a useful alternative sweetener for persons with diabetes.

Wise et al[17] also studied the effects of sucrose-containing snacks on blood glucose control in 16 subjects with IDDM at a diabetes camp. Eight subjects ate sucrose-sweetened snacks twice a day (7% of total calories, 24 g of sucrose ingested at one time, equivalent to the amount contained in two fudge brownies, 1-1/2 iced cupcakes, or a slice of apple pie). Eight subjects ate snacks sweetened with aspartame (1% of the total calories from sucrose). The snacks were divided into 15 g carbohydrate equivalents and the number ingested at a given time depended on the subject's calorie level. No significant differences were found between the control and the sucrose group on daily capillary blood glucose levels or fructosamine concentrations on days zero and five.

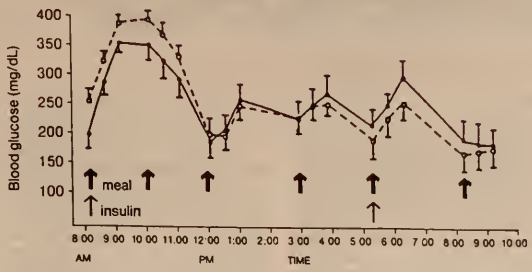


Figure 2. *Blood glucose levels from 8 AM to 9:30 PM for sucrose-free and sucrose-containing two-day diet periods for 10 children with IDDM. The solid black dots indicate the sucrose-containing diet; the open dots indicate the fructose-free diet. Reprinted with permission from Loghmani E, et al.*[15]

Potential Problems from Eating Sucrose

To be fair, a dissenting view also must be presented. Coulston et al[18] published a study in 1985 in which they compared diets with 16% and 1% of the calories from sucrose eaten by persons with NIDDM. In 11 subjects, a slight increase in day-long triglyceride levels (220 mg/dL versus 190 mg/dL) was reported (probably not clinically significant), in addition to slightly higher day-long glucose levels.

A second study[19] in nine persons with NIDDM compared a high-carbohydrate (60%), low-fat (20%), sucrose-containing (10%) diet with a 40% carbohydrate, 40% fat, and 3% sucrose diet in two 15-day study periods. Fasting plasma glucose and insulin concentrations were similar, but incremental glucose and insulin responses, and 24-hour urine glucose excrelion were greater in response to the high-carbohydrate, low-fat diet. Fasting triglyceride levels also increased by approximately 40 mg/dL, postprandial triglycerides increased by approximately 50 mg/dL, and HDL cholesterol decreased from 37 mg/dL to 34 mg/dL, again emphasizing the apparent need to keep carbohydrate and fat intake consistent when sucrose is ingested.

However, it also should be noted that most other studies have not reported a detrimental effect on blood triglyceride levels.[7,10-13] Reaven[20] summarized a symposium on controversies in nutrition and concluded that there is little evidence to indicate a deleterious effect on carbohydrate and lipid metabolism when the intake of refined sucrose is less than 10% of total calories.

The Consumer, the Public, and Professional Confusion About Sugar

It is very difficult for persons with diabetes not to feel guilty if occasionally they substitute foods containing sucrose for starches in their meal plan. Steel et al[16] noted that "... the view that persons with diabetes should avoid 'sugar' is firmly established in the minds of doctors, dietitians (and nurses) and the public! Any challenge to that view may be regarded as heretical." Almost 10 years later, this view still prevails.

People with diabetes and the general public often assume that foods that do not contain sucrose can be eaten in any amount by people with diabetes. Cake, for example, has been on the avoid list because it contains sucrose, yet less than 30% of the calories in cake are from sucrose. The remaining calories are from other carbohydrate and fat ingredients that also require insulin to be metabolized and can affect blood glucose levels.

(Continued on page 16))

Table. Nutritive Content of Eskimo® Pies

Type	Quantity	Calories	CHO	Protein	Fat	Exchanges
Regular	1	180	16	2	12	1 starch/bread 2 fat
Sugar Freedom®	1	145	12	3	11	1 starch/bread 2 fat

Avoiding sugar: Does research support traditional beliefs?

(Continued from page 15)

When non-nutritive sweeteners are available for use in baking, people again may assume that desserts made with these sweeteners can be consumed in unlimited quantities because they do not contain sucrose. Even a food that does not contain sucrose *can* affect blood glucose levels.

Sugar Freedom Eskimo® Pies are a representative example. Regular and sugar-free Eskimo® Pie bars are compared in the Table. A sugar-free bar has only 4 g less of carbohydrate and 35 fewer calories than a regular Eskimo® Pie. Persons with diabetes who assume they can eat unlimited amounts of these bars because they contain no sucrose, without making substitutions in their meal plans, are only fooling themselves.

The Bottom Line

Crapo[21] pointed out that studies indicate there is a spectrum of blood glucose responses to different carbohydrates — sugars and starches — with so much overlap that they cannot be distinguished as separate groups. When the grams of carbohydrate are equal, the source of the carbohydrate, sugar versus starch, is not the major factor in determining the effect of the food on blood glucose levels.

The end result, and the good news, is that people with diabetes can learn to use foods containing sucrose more intelligently. This ability is important because it is almost impossible to avoid sucrose, which is the leading food additive used in the United States. Being cautious about the use of foods containing sucrose still is good advice, especially if they contribute large amounts of carbohydrates in small portions and are likely to have a high fat content and a significant number of calories. But moderate amounts of sucrose can be substituted or eaten for a portion of the total carbohydrate in the meal plan of most persons with diabetes. Sucrose, however, should be eaten within the context of a healthful diet.[22]

The first guideline to remember is that it is necessary to learn how to substitute sucrose-containing foods for other carbohydrate-containing foods, such as for starches or fruit in a meal plan. The studies show that sucrose can be substituted (but not added) in the diet without compromising blood glucose levels. Sucrose does not cause a more rapid rise in blood glucose levels than starch (see Figures 1, 2).

It has been suggested that a dessert exchange list be developed. However, this list already exists, although it could be expanded. The 1986 ADA *Exchange Lists for Meal Planning*[23] includes a list, "Foods for Occasional Use." You will notice that portion sizes are quite small.

A more difficult question is how often sucrose-containing foods should be substituted for other carbohydrates in a meal plan. Most of the studies substituted moderate amounts of sugars daily. The American Diabetes Association has recommended that modest amounts of sugar are acceptable, as long as blood glucose and lipid levels remain in control.[1] The NIH consensus statement[24] on the role of diet and exercise for persons with NIDDM suggests that the use of sucrose is considered acceptable for persons who do not have elevated triglycerides (up to 5% of carbohydrate calorie intake). For a 1,500-calorie diet, about two teaspoons of sucrose or the amount of sucrose found in a small dessert would be acceptable. The Parma paper[20] recommends consuming less than 10% of the total calories from carbohydrate. Peterson et al[11] noted that persons with NIDDM who are overweight need to restrict all calorie-dense foods (fat and sucrose). However, because diets with some sucrose are more tasty, the inclusion of small amounts of sucrose might be useful in helping persons with diabetes stick to their meal plans.

The bottom line is that no one, with or without diabetes, can eat unlimited quantities, or very large portions of sucrose-containing foods often without affecting their blood glucose levels or their weight. The new Food Guide Pyramid[25] developed by the United States Department of Agriculture emphasizes this point by placing fats, oils, and sweets at the top of the pyramid, with the advice to use sparingly.

Recommendations are not made to encourage sucrose use, but instead to help persons with diabetes learn to incorporate the use of sucrose appropriately in their meal plans. It is hoped that persons with diabetes will be able to follow their meal plan better if they can eat foods more similar to what their friends and families are eating.

Also, there is no evidence that consumption of sugars exacerbates the onset of diabetes. If sugar plays any role at all, it probably is an indirect one. Excess sugar consumption, if accompanied with a high fat intake, could be a contributing factor to obesity.

Today's research indicates that moderate amounts of sucrose, eaten occasionally within the context of a healthy diet, are not detrimental to glycemic control for most persons with diabetes. Testing blood glucose levels routinely and testing triglyceride levels periodically is the best way to determine a person's response to sucrose. So while persons with diabetes need to be mindful of sugar consumption in their diets, they need not feel guilty if they choose to eat foods that contain sugar.

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Ann Terry is a registered dietitian who works at the State Hospital in Fulton, Missouri and at the Veterans Administration Hospital of Columbia, Missouri. She graciously calculates the diabetic exchanges and food values for our recipes.

Send your great ideas to the editor. He is the official taste tester and needs recipes to test his taster.

Orange Halibut Broil

from Martha Young
of Braymer, Missouri

1 lb. frozen halibut fillets
2 tbsp. orange juice concentrate, thawed
1 tbsp. parsley flakes
1 tbsp. lemon juice
1/4 tsp. salt (optional)
1/2 tsp. dried dill weed
1/2 cup water

Place fish in shallow pan. Mix concentrate and balance of ingredients, pour over fish. Marinate 30 minutes, turning once. Remove fish and reserve marinade. Place fish on nonstick pan and broil three inches from the heat for six minutes, turn during broiling. Broil 5-6 minutes. Baste with reserved marinade and garnish with orange slices.

Yield: 4 servings; Calories: 120; Diabetic Exchanges: 2 lean meat.

The following recipes are designed to yield four servings. One-third cup cooked white or brown rice is equal to one starch/bread exchange.

How To Prepare Rice

For best results, always follow package directions. When directions are not available, use this easy method: Combine 1 cup rice, liquid (see chart), 1 teaspoon salt (optional) in 2 to 3-quart saucepan. Heat to boiling; stir once or twice. Lower heat to simmer, cover with tight fitting lid. Cook according to time specified on chart. If rice is not quite tender or liquid is not absorbed, replace lid and cook 2 to 4 minutes longer. Fluff with fork.

1 Cup Uncooked Rice	Liquid	Cooking Time
Regular-milled long grain	1-3/4 to 2 cups	15 minutes
Regular-milled medium or short grain	1-1/2 cups	15 minutes
Brown	2 to 2-1/2 cups	45 to 50 minutes
Parboiled	2 to 2-1/2 cups	20 to 25 minutes
Precooked	Follow package directions	
Flavored or seasoned mixes	Follow package directions	

Garlic Rice With Pine Nuts

1 small green pepper, cut in strips
1 small red pepper, cut in strips
1/4 cup pine nuts or slivered almonds
1 clove garlic, minced
1 tbsp. margarine, melted
1-1/3 cups cooked rice (cooked in fat-free chicken broth)
2 tbsp. snipped fresh parsley

Cook peppers, pine nuts, and garlic in margarine in large skillet over medium-high heat until light brown. Add rice and parsley; stir until thoroughly heated.

Microwave Instructions: Combine peppers, pine nuts, garlic, and margarine in shallow two-quart microproof baking dish. Cover and cook on HIGH (maximum power) 4 to 5 minutes; stir after two minutes. Stir in remaining ingredients; cook on HIGH one minute or until thoroughly heated.

Yield: 4 servings; Calories: 148; Diabetic Exchanges: 1 starch/bread, 1/2 vegetable, 1-1/2 fat.

Lemon Rice

1/2 cup uncooked rice
2 tsp. margarine
1 clove garlic, minced
1/2 tsp. grated lemon peel
1/8 tsp. ground black pepper
1 cup fat-free chicken broth
2 tsp. snipped fresh parsley

Combine all ingredients except parsley in medium saucepan. (If using brown rice, use 1-1/4 cups fat-free chicken broth.) Bring to a boil; stir once or twice. Lower heat to simmer; cover with tight-fitting lid. Cook 15 minutes (45 minutes for brown rice, 20 minutes for parboiled rice) or until liquid is absorbed. Stir in parsley.

Yield: 4 servings; Calories: 105; Diabetic Exchanges: 1 starch/bread, 1/2 fat.

Gazpacho Salad

2 tbsp. EACH: vegetable oil and white vinegar
1 clove garlic, minced
1/2 tsp. basil leaves
1/8 tsp. EACH: salt and ground black pepper
1-1/3 cups cooked rice, cooled to room temperature
1 cup sliced fresh mushrooms
2 medium tomatoes, cut in wedges
1/3 cup green and/or red pepper strips
1/4 cup sliced green onions, including tops
1 tbsp. snipped fresh cilantro parsley
Lettuce leaves

Combine oil, vinegar, garlic, basil, salt and pepper in large bowl; mix well. Add remaining ingredients except lettuce leaves; toss lightly. Serve over lettuce leaves.

Yield: 4 servings; Calories: 142; Diabetic Exchanges: 1 starch/bread, 1/2 vegetable, 1 fat.

Ginger Coconut Rice

1/4 cup EACH: golden seedless raisins, diced red pepper, and sliced green onions, including tops
2 tbsp. snipped fresh parsley
1 tsp. ground ginger
1 tbsp. margarine
1-1/3 cups cooked rice (cooked in fat-free chicken broth)
1 can (8 oz.) pineapple tidbits in juice, drained
1/4 cup flaked coconut, toasted

Cook raisins, pepper, onions, and parsley with ginger in margarine in large skillet over medium heat. Stir in remaining ingredients; cook until thoroughly heated.

Yield: 4 servings; Calories: 162; Diabetic Exchanges: 1 starch/bread, 1 fruit, 1 fat.

(Note: Courtesy of the USA Rice Council. For a free pamphlet titled, *Light, lean & low-fat,* send SASE to: USA Rice Council, Dept. LL, P.O. Box 740121, Houston, TX 77274.)

Cooking Tips

From Frances Allen of Columbia, Missouri

• Tough meat will be made tender if placed in vinegar water for a few minutes.

• To hasten the ripening of garden tomatoes or avocados, put them in a brown paper bag. Close the bag and leave at room temperature for a few days. Check each day for ripeness.

What you always wanted to know but didn't know where to ask

(Resource list)

Inclusion of materials in this publication is for information only and does not imply endorsement by the Diabetics Division of the NFB.

Products for Blind Diabetics

The National Federation of the Blind (NFB), the largest and oldest organization of blind people in existence, has a materials center offering a wide selection of aids and appliances for blind people of all ages. A nonprofit organization, the NFB is not seeking retail price income from the items it sells. Since there is such a high incidence of blindness from diabetes, the NFB Materials Center is now offering the following products, at substantially reduced prices.

Low Dose Count-A-Dose Insulin Measuring Device: Calibrated for use with B-D U-100 1/2 cc syringes only. By turning a wheel, clicks are heard that measure one-unit increments. Holds one or two vials of insulin for mixing; the needle penetrates the bottle stopper automatically. Instructions are provided on cassette and in print. NFB Cost: $40.

Talking Blood Pressure Meter: This unit gives systolic/diastolic and pulse readings, both spoken and on oversize LCD display. The unit is portable, and runs on four AA batteries (included). NFB Cost: $149. The unit is shipped with a standard size cuff, but smaller or larger cuffs are available for $20 each.

Lifescan One Touch II Blood Glucose Monitor: Provides accurate results in 45 seconds. NFB Cost: $120. The NFB Materials Center offers the test strips for this glucometer as well. A bottle of 50 is priced at $33.

Voice Synthesizer for the Lifescan One Touch II: This module attaches to the glucometer, and provides audio output. Easy to use, the module is shipped with large print instructions explaining how to connect it to your Lifescan monitor and directions for using the system. NFB Cost: $199. Optional AC adaptor costs $33.

Talking Thermometer: Provides audible readout of body temperature. NFB Cost: $69.

To order any of the above, or to receive a free products catalog, in Braille or print, contact the National Federation of the Blind, Materials Center, 1800 Johnson Street, Baltimore, MD 21230; Telephone: (410)-659-9314. Visa, Mastercard, Discover, or personal check accepted. All of the above items are on order, and should be in stock by press time.

(Continued on page 18))

What you always wanted to know but didn't know where to ask

(Continued from page 17)

Blood Glucose Testing via Computer

We have been asked to announce: Blazie Engineering, along with Dr. Tim Cranmer, Director of Research and Development for the NFB, has developed a simple modification to the Braille 'n Speak, allowing owners to directly interface it with the Lifescan One Touch II blood glucose monitor. The new product, a special cable, allows voice output of the Lifescan readings, and also allows the user to store readings in a file inside the Braille 'n Speak, or print them out in Braille. The cable is available for $25 from Blazie Engineering. Anyone who already has a Braille 'n Speak and the Lifescan One Touch II glucometer needs only to invest in the cable to make the unit usable.

Blazie Engineering offers a free 32-page catalog of technology-based products for blind and visually impaired people. The catalog features more than 50 items; printers and Braille embossers, screen readers, computer accessories and more. In addition to Blazie's own products, manufacturers represented include Arkenstone, Duxbury, Raised Dot Computing, IBM, Thiel, Henter-Joyce and Accent.

The catalog contains product warranty and service information, as well as details about free instructional seminars, and is available at no charge in print, on audiocassette, or by accessing Blazie's computer bulletin board. For more information, contact Blazie Engineering, 105 E. Jarretsville Road, Forest Hill, MD 21050, or call (410) 893-9333.

Diabetes Information Available from the National Library Service

The National Library Service for the Blind and Physically Handicapped (NLS) provides a free library service of recorded books and magazines to persons who are unable to use standard print materials because of visual or physical limitations. This service is available to eligible residents of the United States and American citizens living abroad.

Individuals and institutions eligible for the NLS program may request appropriate playback equipment on free loan for as long as they are actively using this library service. Full details about eligibility requirements, a list of available equipment, and the addresses of cooperating libraries may be obtained by contacting the Reference Section, National Library Service for the Blind and Physically Handicapped, Library of Congress, Washington, DC 20542; telephone: 1-800-424-8567.

A list of diabetes titles, on cassette and in Braille, in the NLS catalog

Diabetes in the Family, by the American Diabetes Association, Revised Edition, Prentice Hall, 1987. On cassette: RC 27378, and in Braille: BR 07282. This text details the specifics of the disease and discusses the importance of daily glucose testing, diet, exercise, good hygiene, and insulin treatment. It also considers social aspects of the disease and research in diabetes treatment.

The Diabetic's Book: All Your Questions Answered, by June Biermann and Barbara Toohey, St. Martin's Press, 1990. On cassette: RC 33474. The authors, who know firsthand about life with diabetes, speak to every type of diabetic — Type I or Type II, young or old, in or out of control. They discuss how diabetes affects emotions, diet, health, and daily life; describe the difference between types of diabetes; and offer advice on how to help family and friends understand your diabetes.

What Does It Feel Like to Have Diabetes?: A Diary of Events in the Life of a Diabetic, by Denise J. Bradley, with forewords by Martin J. Conway and Kathryn Hazard, C.C. Thomas, 1987. On cassette: RC 32581. An intimate chronicle by a young woman who was diagnosed as having diabetes at age eleven. She shares her experience over the past 23 years since discovering she had the disease, and describes her journey from denial to realistic acceptance.

Diabetes Mellitus: A Practical Handbook, by Sue K. Milchovich and Barbara Dunn-Long, 5th Edition, Bull Publishing Group, 1990. On cassette: RC 33345. A registered dietitian and an educator provide a guide for diabetes patients, most of whom manage their own care, with the help of health professionals. Of special interest to the newly-diagnosed diabetic, the book covers such practical information as monitoring glucose levels and administering medication.

Diabetic Cooking from Around the World, by Vilma Liacouras Chantiles, Harper & Row, 1989. On cassette: RC 30204, and in Braille: BR 08070. A cookbook to add sparkle to a restricted diet. While not an introduction to diabetic nutrition, the book does incorporate the American Diabetes Association's exchange lists. Each recipe includes the estimated number of calories and nutrients per serving.

American Diabetes Association Holiday Cookbook, by Betty Wedman, Prentice Hall, 1986. On cassette: RC 25514. This text includes recipes for festive food that is low in sugar, fat, and salt. All conform to the American Diabetes Association's guidelines of no more than half a teaspoon of sugar per serving. Recipes are arranged mainly by courses of a meal, including several chapters on desserts. Each recipe includes full nutritional information.

Diabetes Titles Produced by Regional Libraries

Basic Information Series, by the American Diabetes Association, published by the American Diabetes Association, 1989. On cassette: Tx-BPH CBT 4527. Brochures from the American Diabetes Association.

Serie de Informacion Basica, American Diabetes Association, published by American Diabetes Association, 1989. On cassette: Tx-BPH CBT 4628. Vienticuatro folletos de la Asociacion Diabetica Americano titulados.

Diabetes 101: A Pure and Simple Guide for People Who Use Insulin, by Richard O. Dolinar and Betty Page Brackenridge, DCI Publishers, 1989. On cassette: Wa-BPH CBA 5865.

Diabetes: Caring for Your Emotions as Well as Your Health, by Jerry Edelwich and Archie Brodsky, foreword by Ronald A. Arky, Addison-Wesley, 1986. On cassette: Tx-BPH CBT 4218 and Wa-BPH CBA 5006 (same text). Deals with the adjustments one makes to the emotional impact of being diagnosed a diabetic — making rational decisions about diet, exercise, medication, new technology, work and leisure. Also addresses complications that can arise in marriage, family life and career choices.

Learning to Live Well with Diabetes, by Donnell D. Etzweiler, et al; editor, Michael P. Moore, published by the International Diabetes Center, Park Nicollet Medical Foundation, 1985. On cassette: Tx-BPH CBT 4777. An up-to-date, comprehensive and easy to understand manual designed to help people with diabetes work with their health care team to improve control of the disease and their quality of life. The book was written by prominent medical and health care experts to help the reader set personal goals for weight control, exercise, living longer, emotional attitudes, and avoiding complications. It also contains the newly updated exchange lists.

Taking Care of Your Diabetes, by Robert S. Mecklenburg, published by the Virginia Mason Diabetes Center, 1990. On cassette: Wa-BPH CBA 5876. Diabetes self-help techniques.

Noninsulin-Dependent Diabetes, a publication of the US Dept. of Health and Human Services, the Public Health Service, and the National Institutes of Health, 1987. On cassette: Tx-BPH CBT 4373. Non-insulin dependent diabetes is more common than most people realize. Treatment can control it, reduce the likelihood of long-term problems and increase the chances of a long healthy life.

Exchanges for All Occasions: Meeting the Challenges of Diabetes, by Marion J. Franz, revised and expanded 1987. On cassette: OCL-BPH CCL546. These exchange lists for diabetics include information on ethnic foods, convenience foods, and special occasions.

The Art of Cooking for the Diabetic, by Mary Abbott Hess and Katharine Middleton, Contemporary Books, 1988. On cassette: Tx-BPH CBT 4461. Up-to-date information on diabetes nutritional management — including recommendations about fiber, sweeteners, and types of fat.

Convenience Food Facts: Help for the Healthy Meal Planner, by Arlene Monk and Marion J. Franz, second edition, published by the Diabetes Center, 1987. On cassette: OCL-BPH CCL541. This book lists the nutritional information for convenience foods by type of product and brand name.

Cooking With Care, by the American Diabetes Association, published by the American Diabetes Association, 1986. On cassette: Co-B CC 02448. Tempting recipes with the special nutritional needs of the diabetic individual in mind.

Magazines and Newsletters

(All publications listed except ***Voice of the Diabetic*** are circulated on loan and must be returned.)

Diabetes Forecast, published monthly by the American Diabetes Association, available on cassette. Diabetes, nutrition, health care; research findings. Please contact your cooperating library if you wish to receive this publication. The regional libraries for Iowa and Nebraska can provide submaster tapes of this magazine.

Diabetes in the News, published bimonthly by the Ames Center for Diabetes Education, on cassette, contains current information about diabetes research and patient care. Please contact your cooperating library if you wish to receive this publication. The regional libraries for Iowa and North Carolina can provide submaster tapes of this magazine.

Diabetes Self Management, published quarterly by R.A. Rapaport Publishing, on cassette, contains current information about diabetes research and patient care. Please contact your cooperating library if you wish to receive this publication. The South Dakota Regional Library can supply submaster tapes of this magazine.

Voice of the Diabetic, published quarterly in print and on cassette, without charge, by The Diabetics Division of the National Federation of the Blind. Personal stories and practical guidance by blind diabetics and medical professionals. Free subscription available directly from: *Voice of the Diabetic*, 811 Cherry St., Suite 309, Columbia, MO 65201; telephone: (314) 875-8911.

Food for thought

We invite blurbs and tidbit articles for inclusion in this column. Materials received may be edited and used as space permits. Products and services included in this column are for information only and do not imply endorsement by The Diabetics Division of NFB.

Two Life Insurance Policies from Gerber

by Peter Nebergall

Persons with diabetes, like persons with other chronic medical conditions, often experience discrimination and difficulty in the purchase of life insurance. Some individuals have had to do without any coverage at all. Now Gerber Life Insurance Company, a subsidiary of Gerber Products, the familiar baby food manufacturer, offers a pair of policies of possible interest to the diabetic.

The two life insurance policies are similar in important ways. Neither requires a medical examination. There is NO exclusion for any pre-existing medical condition. Issuance is guaranteed. Both price by benefit "units," individual chunks of coverage ranging from $1000 to $3750. On the down side, both impose a short period (two to three years after date of policy issuance) during which the payable death benefit is limited to the return of all premiums paid plus interest. After the stipulated period, full benefits are paid. These are not policies for young people either; both impose minimum age requirements.

The simpler policy, available by mail, is "Guaranteed Term Life Insurance for Ages 50 to 74." An individual may purchase one to four units of coverage. As the policyholder ages, the benefit value of each unit drops, from $3750 at age 50 to $506 at age 75. Price per unit is $1 per week, four units maximum.

The more complex policy, "Graded Benefit Whole Life," is available only through licensed insurance agents. Its minimum issue age is 40. Its "units" are benefit amounts of $1000 each, and their value does not diminish as the policyholder ages. Price per unit is determined by the policyholder's age at time of application, and that price will remain in force for the life of the policy. A male applicant, age 40, would pay $44 per unit, but a male applicant, age 80, would pay $237.60 per unit, although an 80-year-old policyholder who purchased the policy at age 40 would still be paying the $44 per unit premiums. Minimum number of units: one, of $1000. Maximum issue: 25 units, $25,000.

These policies are substantially more expensive than mainstream life insurance, but may be worthwhile alternatives to doing without any coverage at all. You may contact Gerber Life Insurance for information at 1-800-253-3074. It is recommended that you confer with an insurance agent before making any purchases.

New Diabetics Division

The National Federation of the Blind of Georgia has formed a new Diabetics Division. Led by the capable Sandra Ausburn, the new division should be a valuable resource for Georgians. Its board includes: Sandra Ausburn, President; Wayne High, Vice President; Max Parker, Treasurer; Kaye Zimpher, Secretary; Vivian Parker and Blanche Griffin, Board Members. Congratulations to the founding members of the National Federation of the Blind of Georgia Diabetics Division, our newest division!

A Hug a Day

From the Editor: Elmer Barnett of Portland, Oregon wrote that he helps his wife with her diabetes. He said, "There are three important words one must use: Love, Patience, and Understanding — and lots of T.L.C." I received the following from him.

Hugging is nothing less than a miracle drug. It helps the body's immune system, cures depression, reduces stress, and induces sleep. It's rejuvenating and invigorating, yet has no unpleasant side effects.

It's all natural, organic, and naturally sweet. It contains no pesticides, no preservatives, no artificial ingredients, and is 100 percent wholesome. There are no batteries to wear out, no periodic checkups, low energy consumption, and high energy yield. It's inflation-proof, non-fattening, non-taxable, non-polluting, and of course, fully refundable. In fact, hugging is practically perfect.

We practice this every day!

Methuselah

Methuselah ate what he found on his
plate and never as people do now.
Did he note the amount of the calorie
count?
He ate it because it was chow.
He wasn't disturbed as at dinner he
sat destroying a roast or a pie.
To think it was lacking in granular fat
or a couple of vitamins shy.
He'd cheerfully chew every species of
food, untroubled by worries or
fears.
Lest his health might be hurt by some
fancy dessert, and he lived over
nine hundred years.

(anonymous)

Biochemists Find Molecular Response That Aggravates Diabetes

Biochemists at Johns Hopkins report further evidence that insulin can be a villain in the most common form of diabetes.

Although their work has yet to be verified in human tissue, the researchers have discovered that insulin produces a problem in how fat cells use sugar. Researchers believe their findings offer good reason not to gain weight. Ironically, more than half of adult-onset or Type II diabetics are overweight.

Focusing on the mouse gene involved in glucose (or sugar) uptake by fat cells, the scientists, led by Jamie R. Flores-Riveros, Ph.D., and M. Daniel Lane, Ph.D., found that fat cells are prone to a molecular response that contributes to sugar build-up in the blood. High blood sugar is the hallmark of adult onset, or Type II diabetes.

About the study, published in the January 15 issue of the *Proceedings of the National Academy of Sciences*, Flores-Riveros said, "We've identified an event that certainly makes a bad situation worse."

The bad situation, specifically, is that in Type II diabetes, the pancreas produces excessive amounts of insulin and the body starts to resist it. As a result, cells can't absorb glucose. In normal conditions insulin would help a cell take up sugar quickly, but in Type II diabetes, cells fail to respond to even high levels of insulin.

Previous research shows that people with Type II diabetes have a lowered level of GLUT4, a protein that allows glucose to pass into cells.

"We've discovered that insulin actually curbs the GLUT4 gene, stopping production of GLUT4 protein," says Lane, director of Hopkins Department of Biological Chemistry.

The next step, he says, is to determine exactly how insulin blocks the gene and thereby the formation of GLUT4 protein. "By understanding this process, it may be possible to bolster the production of GLUT4. This might provide an alternative rational approach to controlling diabetes in adults," he says.

This latest Hopkins work also lends support to one side of an ongoing debate over whether fat or muscle cells account for more glucose uptake in overweight individuals.

"Some say muscle cells do almost all the work, and that may be true under normal conditions," says Flores-Riveros. "But in an obese or diabetic state, fat cells are more abundant and probably contribute more than we thought to sugar metabolism."

For now, clinicians can only hope that reducing body fat will reduce the chance of onset of the disease. Type II diabetes is 10 times more common than insulin-dependent diabetes. More than 13 million people in the United States have Type II diabetes and an estimated six million more have the disease but don't know it, according to the American Diabetes Association.

Onset of Type II diabetes usually occurs in adulthood and its treatment includes diet and exercise. The disease affects the way the body uses nutrients, and causes sugar levels in the blood to be too high. People most at risk for this type of diabetes are over 40, overweight and have a family history of diabetes.

Other researchers in the study are John C. McLenithan, Ph.D., and Osamu Ezaki, M.D., both from Hopkins.

Voice Distributors Needed

Since the ***Voice*** is now offered free, our Diabetics Division will provide extra copies to anyone wanting to help spread the word. We will gladly send from five to five hundred-plus copies each quarter to be used as free literature. Medical facilities can order as needed for patients. Individuals can usually place copies of the ***Voice*** in libraries, pharmacies, hospitals, doctors' offices, or any location of public patronage.

Diabetes education is essential. Anyone who distributes the ***Voice*** will be helping public enlightenment about the disease and its ramifications. People with diabetes and their families learn that they have options, that their world is far greater than whatever "limits" may be imposed by the disease. If you would like to help spread the word by distributing the publication, please contact: ***Voice of the Diabetic,*** 811 Cherry St., Suite 309, Columbia, MO 65201; telephone: (314) 875-8911.

Membership Benefits

by Ed Bryant

During the past few years, our Diabetics Division has grown tremendously. For example, the ***Voice of the Diabetic,*** our quarterly magazine, has risen from a circulation of about 600 in 1986 to the current national distribution of more than 61,000!

Despite our "population boom," I am told that there are ***Voice*** subscribers who don't realize they have the option of membership in our Diabetics Division. For those who might not have heard, or are unaware of the benefits of membership, I have outlined some of the key features for you.

The Diabetics Division of the National Federation of the Blind is an organization that emphasizes people and highly values your involvement. We offer a yearly membership to individuals at no charge, which includes a free subscription to the ***Voice of the Diabetic.*** Though the ***Voice*** is currently offered to everyone free of charge, due to our prolific growth rate non-member subscribers may, at some future date, be asked to pay for their subscriptions. Members automatically have access to committees that are ready to help those with concerns about such varied topics as blindness/visual dysfunction, amputation

(Continued on page 20))

Food for thought

(Continued from page 19)

and prevention, heart disease and stroke, insulin pumps, legislative issues, pancreas transplantation, renal failure–dialysis and kidney transplantation, resource library, sexual dysfunction/male impotence, and resources–aids/appliances. This is one of the many free of charge benefits of membership in the Diabetics Division.

The support and information provided by our committees is valuable, but perhaps just as important is the sense of family our members share. Should concerns about diabetes arise, members can be put in touch with others having similar experiences. This is another unique benefit only available to members.

Indeed, members of our support and information network receive many benefits. To change from non-member status to membership status in the Diabetics Division of the National Federation of the Blind, you need only contact: Ed Bryant, Editor, ***Voice of the Diabetic,*** 811 Cherry St., Suite 309, Columbia, MO 65201; Phone: (314) 875-8911.

Insulin Pump Needed

We have been asked to announce: Does anyone have a used insulin pump they might be willing to donate or sell inexpensively? We know a brittle, insulin-requiring diabetic who is having extreme difficulty keeping her diabetes under control. She and her husband have used most of their retirement savings trying to regulate her diabetes. The couple wants an insulin pump for better diabetes control, but they are unable to afford current retail costs. If you can help, please contact the ***Voice*** editorial office so you can be put in touch with the couple.

Articles Needed

If you are a health professional, a person with diabetes, a family member, or friend of a diabetic, we invite you to submit an article for publication in the ***Voice of the Diabetic.***

If you have diabetes, have you experienced a diabetic complication? If so, your story can be inspiring and enlightening for thousands of men and women who may be facing the same side effects.

One of the goals of the Diabetics Division of the National Federation of the Blind is to show people that they have options regardless of diabetic complications. Are you blind or losing vision? Have you had a kidney transplant? Do you have nerve damage? Have you had an amputation? None of these problems has to be overwhelming. It is helpful to know that others have been down the same road.

If you have doubts about your writing ability, please do not worry. If major changes are needed, you will be contacted before the story is used in the ***Voice.***

All submissions to the ***Voice*** must be upbeat, because our philosophy regarding diabetes is positive. For information and article submission guidelines, contact: ***Voice of the Diabetic,*** 811 Cherry St., Suite 309, Columbia, MO 65201; telephone (314) 875-8911.

Daily Definitions

Blood Pressure — The force exerted by blood pushing against the walls of your blood vessels. The pumping action of the heart creates this force. High blood pressure (hypertension) results when the pressure within these vessels becomes too high. High blood pressure is one of the major causes of kidney failure.

B.U.N. — This term, blood urea nitrogen, refers to the substance urea, which is the major breakdown product of protein metabolism and is ordinarily removed by the kidneys. During kidney failure, urea builds up in proportion to the degree of kidney failure and to the amount of protein breakdown. The symptoms, or uremia, correspond roughly to the amount of urea in the bloodstream.

Fistula — An access for hemodialysis. A fistula is created by a surgical procedure which attaches a vein to an artery. The procedure is usually done in a person's arm. This increases the amount of blood that flows through the vein which causes the vein to enlarge. The larger size of the vein allows needles to be inserted for dialysis treatments. Good care of a fistula is essential to a person on hemodialysis. Consult your health care team about what you should do and not do to maintain a good fistula.

(Note: This column appeared in *Common Concerns*, Vol. 6, No. 1, Winter 1992/93. Reprinted courtesy of Renal Network of the Upper Midwest, Inc., Ann Arbor, MI.)

ADVERTISERS

Effective advertising doesn't scream at its audience. It persuades. It sells. The key to cost-effective advertising is making your voice heard where an audience is already listening. *Voice of the Diabetic* offers such an outlet. Make *your* voice heard. For advertising information contact:

Voice of the Diabetic
Ed Bryant, Editor
811 Cherry Street, Suite 309
Columbia MO 65201
(314) 875-8911

Subscription/Donation Form

The ***Voice of the Diabetic*** is a quarterly magazine published by The Diabetics Division of the National Federation of the Blind (NFB) for anyone interested in diabetes, especially diabetics who are blind or losing vision. It is an outreach publication emphasizing good diabetes control, diet and independence.

Donations are gladly accepted and appreciated. Contributions are not only tax deductible but are needed to keep the ***Voice*** and the Diabetics Division moving forward to help people with all aspects of diabetes.

Members of the NFB Diabetics Division enjoy priority services and unique benefits such as a continuous free subscription to the ***Voice,*** automatic access to committees covering all aspects of diabetes, free counseling concerning all facets of blindness and diabetes as well as access to diabetics who have experienced complications.

The ***Voice*** is free to any interested person upon request. Each subscription costs the Diabetics Division approximately $20 per year. To help defray publication expenses, members are invited, and nonmembers are requested, to cover the subscription cost.

To begin receiving the *Voice, please check one:*

[ ] I would like to become a member of the NFB Diabetics Division and receive the ***Voice of the Diabetic.*** (Members are entitled to special membership benefits.)

[ ] I would like to receive the ***Voice of the Diabetic*** as a nonmember. (Nonmembers are encouraged to pay the institutional rate of $20/one year; $35/two years; $50/three years.)

Send the ***Voice*** in (check one):

[ ] print [ ] cassette tape for the blind and physically handicapped (recorded at slower-than-standard speed of 15/16 IPS) [ ] both

Optionally check this box:

[ ] I would like to make (or add) a tax-deductible contribution of $ _____ to The Diabetics Division of NFB.

Please print clearly

Name _____

Address _____

City _____ State _____ Zip _____

Telephone (_____) _____

Send this form or a facsimile to:
Voice of the Diabetic, 811 Cherry St., Suite 309, Columbia, MO 65201

Please make all checks payable to:
NATIONAL FEDERATION OF THE BLIND